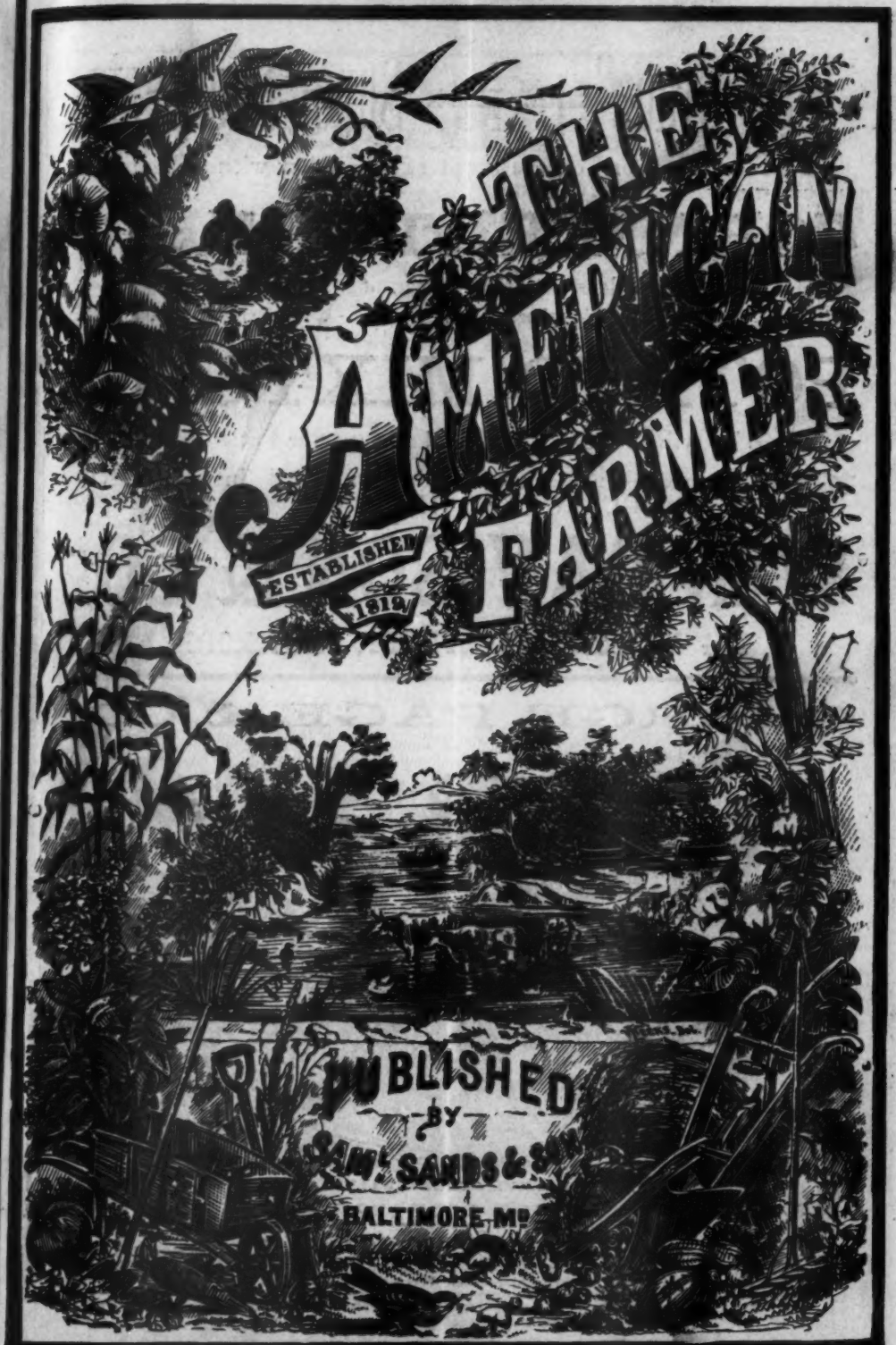

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THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE. MD.

VOL. IX.—No. 6.] JUNE, 1880. [NEW SERIES.

Clover and Commercial Fertilizers for the Wheat Crop.

The following communication from Dr. Thos. Maddox, of Washington Co., Md., was sent to us by the writer for publication in the *American Farmer*. In a note, accompanying the letter, Dr. M. says:

Rev. J. W. Santee, living at Cavetown, a stranger, wrote me for information as to the use of fertilizers, the drill, and my experience and results of farming. I thought a copy of this answer might give variety, possibly some interest, to your paper, and therefore inclose it. It may seem to be boasting to state amounts of crops of wheat, corn, hay, potatoes, &c., but that is part of the results of my farming; and though some make large crops, it may be that others make less; and besides, the main object is how to make the earth produce, and the result of experiments, or the system which, after a series of years, led to the result. If farmers would tell how they farm and the amount of crops realized by their plans, these crops of to-day, compared with crops of thirty years ago, we could judge whether they were making satisfactory progress.

Very respectfully, THOMAS MADDOX.

WASHINGTON CO., MD., *April* 7, 1880.

REV. AND DEAR DOCTOR:

I received your favor some time ago, asking "whether I use fertilizers;" "whether I use them with drill," and the "result of my farming operations," which you wish to present to Pennsylvania friends, in the hope that they may improve their mode of farming. I hope your laudable object may be crowned with abundant success, and remain very respectfully,

THOMAS MADDOX.

DR. J. W. SANTEE.

To the question, "Do you use fertilizers?" I answer yes. A fertilizer Dr. Johnson defines to be something to make the earth produce food for the human family. When not cultivated the earth produces "thorns, thistles and briers." The business of the farmer is to make it produce "bread." "By the sweat of thy brow shalt thou eat bread."

Clover is the great fertilizer; it is cheap, easily applied, and is a thorough fertilizer. The first lesson for a farmer to learn is how to make clover and how to manage it. Clover ought not to be grazed. Early grazing cripples the stalk and prevents the full growth of the stalk and of the root. It is estimated that there are two tons of clover roots on a well-set acre, and it would be difficult to determine which is the most valuable part of the plant as a fertilizer—the roots, the full-grown stalk, or the shade; all are valuable.

The second lesson for a farmer to learn is how to make, how to manage, the barn-yard and the hog-yard. The manure bank is the farmers' best friend. A good article of barn-yard manure, like salt in the kitchen, is an article of indispensable necessity. On manured land commercial manures act with greater power: wheat ripens earlier, is less liable to rust, is not so likely to lodge. The same land, in the same season, with the same labor, will make twenty bushels of corn more on an acre with manure than without it. Wet straw is not manure.

A hearty, strong man cannot work without food and rest in proper quantities, at suitable intervals. As the strength of the strongest man may be exhausted by prolonged and continuous labor, so may the most fertile land be exhausted by prolonged and continuous crops.

There are twenty-six pounds of phosphoric acid in twenty-five bushels of wheat. If the soil cannot furnish the twenty-six pounds of phosphoric acid, the land cannot yield twenty-five bushels of wheat to the acre. "You cannot get blood out of a turnip."

The farmer ought to study carefully the wants of his soil. A soil may possess all the elements of fertility except one, and because of the absence of the one ingredient may be almost inert.

The value of all manures is in proportion to its solubility. Chemical agents act and react on each other. The great agricultural writer, Baron Von Liebig, illustrates this idea by saying a piece of steel wire immersed in nitric acid is not oxidized; a piece of steel wire immersed in muriatic acid is not oxidized; but a piece of steel wire immersed in equal parts of nitric and

muriatic acid is oxidized rapidly. Fields barely manured from the barn-yard may yield large crops of straw—light crops of wheat—because of a deficiency of phosphoric acid in the soil. An application of finely-ground bones, with less manure, might secure a fine crop of wheat of superior quality. Dr. Higgins, our State Chemist, told us thirty years ago our soils needed phosphates.

Pure finely-ground bone is the most valuable of all commercial fertilizers. Large quantities are used in our county. Many of our people doubted whether Dr. Higgins knew anything about the value of phosphatic manures thirty years ago;—now we know he was right.

Whether it would be advisable for us to use the raw or the dissolved bone is, to me, an unsettled problem.

Bones in a natural dry state contain gelatine						30.58 parts.
"	"	"	"	"	" lime	30.59 "
"	"	"	"	"	" phos. acid	27.84 "
"	"	"	"	"	" carb. lime	7.07 "
"	"	"	"	"	" chlo. calc'm.	1.83 "
"	"	"	"	"	" phos. mag.	2.09 "

I use one hundred and fifty to two hundred pounds to the acre. "Do you use the drill?" Yes. Half the quantity of a fertilizer, applied by a drill, will increase the quantity of the crop as much as double the quantity applied broadcast. Phosphates cause the wheat to ripen earlier, stiffen the straw, make the grain plumper.

Bones act finely on fallow, on corn land, or on wheat stubble.

If I had a poor farm, like the land along the railroad between Baltimore and Washington, I would use two hundred pounds ground bones, one hundred pounds best Peruvian guano, a bushel of common salt and a bushel of plaster, mixed, drilled in with the wheat, and I should expect to make, on a clay sub-soil, fifteen to twenty bushels of wheat to the acre, and a good crop of clover the next season. A good crop of clover, which remains on the land uncut, ungrazed, is the best preparation for a crop of corn, or wheat, or potatoes, or tobacco, that a farmer can make.

I suppose the alkalies, potash, soda and magnesia of a soil, may be exhausted by successive crops, and therefore some alkaline preparation of soda or potash might be added advantageously to the bone and guano, as a fertilizer for wheat.

Daniel McClendon, near Rohrersville, Washington Co., a very good farmer, says the first crop of clover seed, after applying one hundred bushels of lime to the acre, will pay for the lime and the expense of its application. He has a red clay soil.

When I came to Washington Co. to live, thirty years ago, my crop of wheat was from ten to twenty bushels per acre. Now, with the same seed, on the same land, I can make twenty-five to thirty bushels per acre.

In 1877 I made 2,000 bushels; in 1878 I made 1,885 bushels; in 1879 I made 2,200 bushels of wheat on 70 acres In 1879 I made also, on thirty acres, 1,800 bushels of corn; 400 bushels Irish potatoes; 200 bushels of apples; 12 bushels clover seed, &c. I have 185 acres.

The Lawson Brothers, near Urbana, Montgomery Co., Md., bought their father's farm ten years ago for ten dollars per acre. In 1878 they made 2,700 bushels of wheat on fifty-two acres—fifty-two bushels of prime amber wheat per acre. They used a Baltimore fertilizer.

But you cannot make twenty, thirty, forty, fifty bushels of wheat per acre on poor land.

The extent of the influence of mind over matter has not been tested. Great progress has been made in agriculture in the nineteenth century. It may be that greater progress, grander achievements, may be in store for us in the near future. We need farmers of intelligence; men with "brains" to teach us how to make the earth produce bread; how to make more clover and how to manage it as a fertilizer to better advantage; how to make more manure and manure of a better quality;—men of "brains" to teach us how to look through Nature up to Nature's God; "brains" to understand that Paul may plant, Apollos water, it is God that giveth the increase. Very respectful,

THOMAS G. MADDOX.

REV. J. W. SANTEE.

"Ensilage"—How to Manage It.

We have so frequently dilated upon this subject that it would appear almost like a work of supererogation to add further details to what we have heretofore given. But the probable shortening of the hay crop by the protracted drought, which has extended throughout the Middle States for some weeks past, admonishes us that other provision must be made for the supply of food for the stock for the ensuing year; and in addition to the root crops, which are usually made to supplement the forage crops for this purpose by many of the most thorough farm managers, we know of no other article which can be made available to the same extent as fodder corn, on the plan of M. Goffart, whose pamphlet was several years ago translated specially for the pages of the *American Farmer*. The subject is now being universally canvassed, and the inquiries for information are on the increase.

At a late meeting of the Tuckahoe Farmers' Club, of Va., Dr. Monro Banister presented, by request, to the club, what he knew about "Ensilage," which was published in the *Religious Herald*, and from which we make the following extracts, embracing the most particular points in the address:

As stated in a paper furnished to the March number of the *Southern Planter*, I partially failed last October in successfully conducting an ensilage experiment. The source of that failure was distinctly pointed out as an error to be avoided, and I beg leave to refer the club to it. But lest the number of that journal may not be at hand, I will here detail the process by which my intelligent Scotch neighbor, Mr. Thos. Hunter, in avoiding a single blunder of mine, attained a perfect success.

For his silo, a pit was dug, in a heavy clay soil, under a part of his wagon shed. Its dimensions were 10 feet in depth, the same in width, and 20 feet in length. The shed was open at the west; and on this side, from the bottom of the pit to its top, planks were nailed to studs introduced at intervals, so as to cover that side. The other three sides, together with the bottom, were left as they were dug—without facing of any kind. The result proved that, in this instance, none was required. But the winter was exceptionally dry. During our long rainy seasons, such as are not unfrequent, I should prefer a silo faced with boards, and additionally protected by an outside blind-ditch, deeper than the bottom of the ensilage pit. M. Goffart recommends brick walls for the purpose, 1½ bricks thick, and worked with cement—the bottom being coated with concrete. This would no doubt afford additional security, as well as permanency. But the cost would not be inconsiderable; and at least until perfect confidence is acquired, perhaps the boards will answer our purpose. If water should enter, the ensilage, of course, is spoilt.

The silo should be under cover, although Mr. Morris describes his chief one as being out of doors. He covers with a mound of earth used only *after* compression has been made. At an earlier stage, the earth would be fatal. Various depths for them seem to be adopted, varying from five to sixteen feet. M. Goffart, for his country, recommends 8½ feet.

The silo to which we are particularly referring having been thus made, was filled in the early days of October. Cut down with the ordinary knives used for the purpose, the corn was immediately hauled to the silo, passed at once through a horse-power feed-cutter, and shovelled, as fast as cut up, into it,—the mass being all the while kept well trampled. The work was continued from day to day until the silo was filled. About 2 inches of straw having been spread over the mass, upon this boards were placed across the pit—at right angles to its long diameter. Upon these boards—rough and unplaned—the weights were put.

The boards are so cut as to be rather shorter than the diameter of the pit, so as to pass down into it as the ensilage is diminished in bulk by the pressure. This continuous pressure is the vital point in the whole operation. M. Goffart says it took him twenty-five years to discover it, and that in its absence all his efforts were futile. With it, he can proceed, he says, with entire confidence of success.

The weights may be composed of bricks, stones, billets of wood, or any convenient thing of the kind. Bags or barrels of earth or sand answer the purpose. Its quantity should be about 1,000 pounds to the square yard. Before leaving this branch of the subject, it may be well to add, that in filling a silo, neither rain nor any kind of weather need interrupt the work; and that it is thought all the better if the corn is cut up and gotten in before it has wilted.

As to the material designed to be ensilaged in this silo, it was 2 acres of drilled corn. This was planted in the earlier part of July, but its germination delayed by drought until the 24th of that month, when rain fell. In its growth it encountered another drought, and the yield was what is elsewhere thought inconsiderable—10 tons to the acre of green corn. By the 1st of October it was in full tassel, and this is the period, both of time and maturity, at which it should go to the silo. If greener, it would be less nutritious, and if riper a part of its succulence would yield to the pressure. The harvest is quite laborious, and in Mr. Hunter's case was made unnecessarily slow by the absence of sufficient force and the economic devices which experience alone can suggest. He was occupied in it fully nine days.

The silo was left in the condition last described—no covering outside of the weights—until the middle of January, when it was opened for use. Its contents were found to have been compressed to half their original bulk, the dimensions being now 1,000 cubic feet. A compact mass, almost as much so as tobacco in a hogshead, it was green, succulent, nearly fresh to the taste, and presenting to the eye as tempting cattle food as had been placed there. All kinds of stock to whom it was offered ate it with the avidity usually evinced for growing grass; and the 20 beeves for whose use it was reserved improved under it with remarkable rapidity. To use Mr. Hunter's expression, "It put new life into them." These 20 beeves were fed twice daily, upon a bushel basket of ensilage and 2 quarts of corn meal for each. The weight of the basket of ensilage was 27 pounds, and the whole supply lasted six weeks. This sensible, prudent and experienced Scotch farmer is demonstrating the strength of his faith by increasing the capacity of his silo to about 12,000 cubic feet; and instead of two acres of corn to be devoted to the purpose, is now preparing 28 to that end!

In feeding the ensilage, as much only should be taken from the pit as is to be consumed during the ensuing 24 hours. In from 20 to 24 hours, its temperature, after removal, begins to increase, and an alcoholic odor is acquired. Just that condition is the most proper one for its use. According to M. Goffart's directions, it is taken from the silo by removing one or two of the boards, and cutting out slices of the ensilage down to the bottom. This however cannot be material, as, in Mr. H.'s silo, I saw the whole compacted mass remain uncovered for weeks without injury to it. Upon breaking up the mass, the atmosphere will soon establish fermentation. No doubt the weight, after having effectually done its office, may, for convenience, be entirely removed. I should, in the event of severe weather, use a covering of straw.

I omitted, in its proper connection, to say that the size of the pieces into which the corn is cut is regarded a matter of importance. The finer the better, but they should not be more than a half inch in length.

In filling the silo, as described, an unnecessary waste of valuable space seems to occur. The quantity of corn put into it will, after compression, occupy but the half of its full capacity. To diminish this waste, it is proposed to place around the margin of the silo a frame of boards, so that in filling the cut corn may be heaped 3 or 4 feet above its superficial surface. When

the weight is applied, the whole will sink below that surface.

Since Mr. Hunter's ensilage of corn was made under quite a high temperature, the range of the thermometer having been from 80° to 84°, I am induced to hope that the practice can be conducted at other seasons; and that we may soon enjoy the profitable luxury of feeding green clover in winter time."

[Since the above was put in type we have received the following communication from Mr. Harrison, whose success is clearly established in the management of Ensilage. We hope our correspondent will favor us with the additional data as to its weight, &c., as proposed.—*Eds.*]

Preserving Green Crops (Ensilage.)

Messrs. Editors American Farmer:

I believe I am under a promise to give you the result of my experience in regard to the preserving of green crops in silos. My attention was first called to this matter by accounts of its success in France, although it is by no means a recent discovery, having been practiced for a long period in Europe.

During the summer of 1878 I made an excavation 100 feet in length, 10 feet 6 inches wide at the top, 7 feet wide at the bottom and 6 feet deep. I lined this with slabs of cheap boards, both in the bottom and on the sides. The side boards were 16 feet ones cut in two. They were two feet above the ground in the highest place when finished, and the earth was banked against them on the outside to secure against any surface-water finding its way in. This pit was filled with corn-fodder, cut up one inch in length. I did not have enough fodder to mound it up, so I used straw, and when it was finished and covered with 18 inches of earth it was mounded like a turnip-heap and carefully watched, earth being supplied as it settled. It kept perfectly, and was opened January 16th, 1879.

In the summer of 1879 I increased the length of my pit 75 feet, and I put in a large quantity of corn-fodder to preserve. The hail having destroyed my wheat crop, I plowed up a field and put it in German millet in June and used this also to put in the pit. In September, the corn being in the ear and in tassel, but still very green, I cut it down and hauled it to the pit as fresh and green as possible. Possibly some of your readers would like to know how this corn was raised; and as there are many extravagant statements appearing in regard to the yield of corn-fodder, some remarks in regard to it may not be amiss: My corn (yellow) is put in drills 36 inches apart, strewed in at the rate of five or six bushels to the acre, on land previously well prepared and heavily manured with strong cow-dung (bedding cut in short lengths) and manure put on at over 30 tons to the acre. I cultivate two or three times, and have just finished putting in 12 acres and shall put in the balance this week and next.

I cut the corn up with a No. 5 Daniels' cutter, made in Woodstock, Vt., and by steam power. The corn is not allowed to dry or become wilted if it can be avoided, experience having proved to me that what goes into the pit with dew on it comes out in a very satisfactory condition. I consider the secret of success to be compressing and keeping out rain and surface water. To secure the first I put a man and a mule in the pit and keep him riding the mule steadily; at stated intervals the engine stops and all hands tramp the ensilage next and close to the boards where the mule will not walk. Several times during the day 4 or 5 horses are put in the pit and it is tramped hard. It took me eleven days to fill my pit last year, running an 8-horse engine steadily and dumping the green crops at the side of the cutting-box. I mounded the cut stuff and tramped it with the men, making it 6 feet high in the centre above the level of the top of the pit, covered with straw, and mounded up the earth as last year. I opened on the 5th of December, and have used 3 ox-cart loads a day up to end of February, and from that date two loads until after 5th of May, when it gave out. I shall fill the same silo this year.

I am now building a silo capable of holding over 500 tons; but the walls will be vertical and a roof will be placed over the silo and boards and stones used to cover the ensilage. If you have an earth covering and no roof, I consider sloping sides to the silo necessary. I shall make experiments this year to determine the weight per cubic yard. Monsieur Goffart's first statements put it, I think, at one ton; but he has subsequently modified this. I think my mode of compressing makes it weigh more heavily than he now claims; but when I have ascertained the weight, will write you again on the subject.

I believe I have already made this communication too long, but will be happy to answer in the future any questions as to the modes of feeding it, &c. Yours truly,

CHARLES K. HARRISON.

Annandale Farm, Baltimore Co., Md., May 18th, 1880.

Variety of Grasses for Pastures for Dairy Cows.

A correspondent of the *National Live-Stock Journal* gives the following interesting paper in that pubication:

In laying down pastures great care should be exercised in selecting the seed of a large number of grasses. This is important—first, because the land will produce a much larger yield of food from 12 to 20 varieties of grasses which completely occupy the soil, than from two or three that leave spaces unoccupied; and, secondly, and still more important, because animals require variety in their food, and especially the milch cow, that yields so abundant and complex a product in her milk. Milk contains all the elements of the living animal body in solution. The cow must, therefore, have a great variety, or complex food, out of which to elaborate this production. The dairyman cannot give this too much consideration. Many of our natural pastures contain from 30 to 60 varieties of grasses;

and when good cows are fed upon such pastures they are noted for the high quality of their milk and butter and cheese. Some of these wild grasses are classed as weeds by farmers when they come into their grain fields; but they are highly relished by cattle in their succulent state. All of these wild grasses cannot be sown in pasture; but they will frequently maintain a foothold with the cultivated grasses sown. It is well known that dairy products do not have that extra-fine flavor when produced on a pasture of timothy and clover alone; and, therefore, permanent pastures have been much advocated. But American farmers have not been so careful in selecting a variety of the cultivated grasses as they might have have been. It is quite unusual for our dairy farmers to sow on pastures more than timothy (*Phleum pratense*) and red clover, (*Trifolium pratense,*) occasionally adding June grass, (*Poa pratensis,*) or orchard grass, (*Dactylis glomorata,*) or white clover, (*Trifolium repens,*) and in very exceptional cases all of them. If this list were generally used it would greatly improve the pastures of the whole country; but this meagre list should be enlarged by those who desire the great advantage of variety in the food of their cows, and are endeavoring to establish permanent pastures. It is true that red clover is usually a biennial and will not last long, but will be of much service in the beginning; but there is a perennial variety of red clover, (*Trifolium pratense perenne,*) and is found in almost every field of clover. That enthusiastic botanist, the late John Stanton Gould, says of the perennial:

"It may be distinguished, in general, at a glance, by its deeper, bluish-green color, the greater narrowness of the leaves, its more straggling, and the greater number, greater length and greater stiffness of its hairs. The root of this variety differs considerably from the biennial kind; it is somewhat creeping and fibrous, whereas the biennial has an almost spindle-shaped root, with less fibres. The root is the best test in doubtful cases."

Mr. Sinclair says this variety is found in great abundance in Lincolnshire, Eng., and that it flourishes better on clayey or peaty soils than the biennial. This perennial clover-seed cannot now be found in the market; but a little attention of cultivators might soon furnish the seed, which would be a great gain to pastures. White clover is apt to come of itself on lands suited to it; but it would be well to sow two or three pounds of the seed per acre.

Red top, or herds grass, (*Agrostis vulgaris,*) should never be omitted where the land is moist, for it is a constant resource in pastures, as it grows equally throughout the season. It starts much sooner after cropping or cutting than timothy. It has thick interlacing roots, and on wet lands it consolidates and toughens the sward, making such a firm matting that the feet of cattle do not easily break it. It has a high reputation among dairymen as producing a large amount of food and improving the flavor of the butter.

Of the *Poas*, Kentucky blue grass, or June grass, stands at the head, and is too well known to require any description or commendation; but wire grass, also called blue grass, (*Poa compressa,*) which is found indigenous in many localities, is not so well understood, and requires some attention. This is in meadows often considered a nuisance, because it holds its footing so strongly as to run out other grasses, and produces a small bulk of hay, but very heavy for its bulk. It is one of the most nutritious grasses in our whole list. It starts early in spring, and keeps green and succulent even after the seed is ripe. I think it very valuable as a pasture grass. Mr. Gould mentions that it did not form a close turf with him; but with us no grass forms a closer and tougher sod. It seems to be less affected with drouth or wet than many other grasses, and cows yield well when supplied with it in pasture or stall. It is so nutritious, when cut in season and properly cured as hay, that cows will yield more milk upon it than any other hay we have tried; and horses will work upon it as well as upon timothy, with a moderate feed of oats. It should have a place in all pastures where the natural grasses flourish.

Sweet-scented vernal grass (*Anthoxoranthum odoratum*) should not be forgotten in the list of pasture grasses for milch cows. It starts very early in spring and flowers in May. Its odor in blossom seems to be too strong for the taste of cattle when grown alone, but if mixed with other grasses in pasture or in hay it is eaten with a relish, and is thought to give a fine flavor to milk. It does not produce a large weight of hay; but its odor and flavor and early growth in spring will warrant the use of about two pounds of seed to the acre.

American dairy farmers have given quite too little attention to keeping up the condition of their pastures. Since the system of pasturing is almost universally followed, and the principal income from their dairy herds depends upon the supply and condition of food there furnished, the most imperative necessity demands that they study the means of improving them. Meadows are often considered worthy of attention and fertilization; but pastures are not thought to need such attention, because cattle leave their droppings upon them; yet it must be remembered that the milch cow carries off from the pasture—never to return—the fertilizing matter in her milk. The cow that yields 6,000 lbs. of milk will carry off about 40 lbs. of ammonia and 40 lbs. of mineral matter. And it is easy to see that pasturing for a long series of years must gradually carry off the fertility of the soil. It is, therefore, necessary that there should be some provision for fertilizing permanent pastures used for the production of milk.

EXTRA FOOD TO FERTILIZE PASTURES.

I think one of the best methods of keeping up the fertility of cow pastures is to give the cows extra food during the pasturing season. This extra food will be repaid in extra milk every week, and so enrich the droppings as to fully compensate the pasture for all the grazing. This extra food can be given at such times as the condition of the pasture requires, to give the cows full rations. Under this system a few more cows may be kept than the pasture is sufficient to furnish food for; and thus the pasture will be cropped evenly over the whole field,

and the grass all economized. While the grass furnishes abundance of food, it will not be necessary to add to the ration. This extra food will come in to keep up a proper balance between the requirements of the cows and the condition of the pasture. This extra food may all be given in green clover, rye, or other green food grown upon other fields, or fed to the cows in racks arranged in the pasture, or in stable, with the manure distributed over the pasture as a top-dressing; or this extra food may be given in bran, corn-meal, linseed-oil meal, cotton-seed meal, barley sprouts, or other grain food. Some think it quite as economical to use one or more of these extra foods during the period before green corn, millet, peas, and oats, etc., can be sufficiently matured for this purpose. They reason in this way: If the extra milk will fully pay for these foods, then it is better to use them, because this extra fertilizing matter is brought to the land, instead of being taken from it. Hundreds of experiments have shown that good cows will yield more than extra milk enough to pay for these extra foods. Poor cows will not respond so much to extra feeding, and will not, in fact, pay a profit under any system of feeding; they are not, therefore, to be considered in this statement.

Peas and oats, grown together, just when the peas are past the blossom, make an excellent extra food to make up for deficiency of pastures.

Sweet corn—early and late varieties—is most excellent food for the production of milk. The early varieties will come on the latter part of July, and give the cows a much-relished food.

Stowell's evergreen is an excellent late variety, which may be fed through September and October, and even later. This corn, to be fed green, should be cultivated in the same manner as when intended for market. Thick sowing is now quite abandoned by the most careful feeders. It should be planted in drills, at least 32 inches apart, and cultivated two or more times, according to the condition of the soil. Sweet corn for such feeding is altogether to be preferred to common field corn, because of its remaining succulent so much longer, and also because it contains much more sugar and less starch. The sugar is more easily digested and assimilated, and makes better-flavored milk. It is intended to allow the sweet corn to mature to nearly the same stage as when it is sent to market for culinary use. It is in the best condition for feeding after being run through a straw-cutter; but cows will eat it greedily without cutting. Sweet corn has a larger percentage of albuminoids than common corn. This corn is also excellent to feed with late cuttings of clover, and with green peas and oats. If the dairyman will prepare the land, and put in one acre to each five cows in his herd with sweet corn, peas, and oats, or millet, to be fed at the proper season, he will not only get the best yield from his cows, but keep up the fertility of his pastures.

THE NEW ENGLAND Agricultural Society offers two premiums of $30 and $20 for the best exhibits of machinery for the manufacture of sugar from beets, corn, etc., and $50 for the best two acres of sugar-beets.

Agricultural Experiments.

The following report of some experiments made by Prof. Atwater, of Vermont, and the introductory statement of the fundamental principles of plant growth and fertilization, which we take from the *New England Farmer*, will be read with interest:

Plants, like animals, require food for life and growth. A part of the food of plants is supplied from the atmosphere; the remainder is derived from the soil. No ordinary cultivated plant can thrive without a sufficient supply of each of a number of substances needed for its food. With an abundance of all these, in forms in which the plant can use them, and with other circumstances favorable, the crop will flourish. But if the available supply of any one of them be too small, a light yield is inevitable. For instance, potash is an essential ingredient of the food of plants. If all the other conditions for a good growth of corn, potatoes or other plants are fulfilled in the soil, except that potash is deficient, the crop will inevitably fail. But if the potash be supplied, the yield will be abundant.

In removing crops from the soil we take away plant food. This is the chief cause of soil exhaustion. Lack of fertility is commonly due, in large part or entirely, to lack of plant food.

Soils vary greatly in their capabilities of supplying food to crops. Different ingredients are deficient in different soils. The chief lack of one may be potash, of another phosphoric acid, of another several ingredients, and so on.

Soils fail to furnish enough food to crops, not so much because they have not abundant stores as because the materials are not in available forms. A soil may have thousands of pounds of phosphoric acid within reach of the plant, but locked up in fragments of rock so that the roots cannot absorb it, and thus the crop will fail for lack of phosphoric acid.

The infertility of many soils is due more to their mechanical condition, their texture and relations to heat and moisture, than to lack of plant food. Such soils want amendment first and manures afterward. Some soils will give good returns for manuring; others, without irrigation or amendment by draining, tillage, use of lime, marl or muck, or otherwise, will not.

Plants vary greatly with respect to their demands for food, their capabilities of gathering the ingredients from soil and air, and the effects of different fertilizers upon their growth. Hence the proper fertilizer in a given case depends upon the crop as well as upon the soil.

The only ingredients of plant food which we need to consider in commercial fertilizers are potash, lime, magnesia, phosphoric acid, sulphuric acid and nitrogen. Of this list, magnesia is generally abundant in even "worn-out" soils. Sulphuric acid and lime are more often deficient, and hence one reason of the good effect so often observed from the application of lime and plaster. The remaining substances, the phosphoric acid, nitrogen and potash, are the most important ingredients of our common commercial

fertilizers, because of both their scarcity in the soil and their high cost.

The chief use of commercial fertilizers, guano, phosphates, bone, potash salts, and special fertilizers prepared by formulæ for different crops, is to supply nitrogen, phosphoric acid and potash.

These materials are expensive, but the right ones in the right places are, nevertheless, very profitable. Some of the materials used in the experiments we have to report have, in some cases, given a net profit of nearly one hundred dollars per acre. But the same fertilizers in other trials have brought little or no return.

It is not good economy to pay high prices for materials which our soils themselves may furnish, but it is good economy to supply the lacking ones in the cheapest way. Farmers cannot afford to use commercial fertilizers at random. No more can they afford to have their crops fail when a small outlay for the proper fertilizer would bring a bountiful harvest. And it is time that they understood these facts, the reasons, and how to make use of them.

The only way to find what our soils want is to study them by careful observation and experiments. Success in farming, as in other business, requires the use of brains.

Fertilizers.

Certain kinds of fertilizers sold in the markets furnish nitrogen and little or nothing else of much value for plant food. Such are dried blood, meat-scraps, sulphate of ammonia and nitrate of soda. Others, as phosphates and super-phosphates, owe their effectiveness mainly to their phosphoric acid. Still others contain both nitrogen and phosphoric acid. Such are Peruvian guano, fish guano, bone and "ammoniated" super-phosphates. Peruvian guano and fish supply considerable of both nitrogen and phosphoric acid, while bone and "ammoniated" super-phosphates contain a large proportion of phosphoric acid and but little nitrogen. Potash is supplied in the German potash salts, the "muriate of potash," "sulphate of potash" and kainit. The "complete fertilizers" or "special fertilizers" prepared according to formulas for special crops, as corn, potatoes, turnips, etc., contain all the above ingredients. Farm manures, stable manure, hen manure, etc., supply all the soil-ingredients of plant food. Wood ashes contain all but nitrogen.

There are many cases in which crops fail because the soil does not supply enough phosphoric acid, and where an application of super-phosphate or bone-dust brings a bountiful harvest. There are likewise many in which potash is especially deficient, and potash salt or unleached ashes will supply the need. In some cases nitrogen in nitrate of soda or other form has the desired effect. In others nitrogen and phosphoric acid are needed, and Peruvian guano or fish may be used with great profit. In still others a mixture of super-phosphate or bone-dust and potash salt, supplying phosphoric acid and potash, is the most economical material. Again, on some soils and for some crops nothing short of a "complete" fertilizer will suffice. And finally, while most soils respond to the application of manures, there are many on which all fertilizers fail.

The experiments were arranged to furnish nitrogen, phosphoric acid and potash, one by one, two by two, and all three together, in the same manner as in experiments which have been previously reported in our columns.

Most of the trials were upon worn-out grass land. The weather was generally favorable; but in some cases so wet or so dry, so warm or so cold, as to materially injure the crop.

On the whole the results vary widely with the soils. But these figures alone are not satisfactory without further considerations which will appear hereafter. Meanwhile it may be noted that the largest average results were obtained with the "complete" chemical fertilizer, which excelled even the farm manures.

The most profitable fertilizer on the average was the mixture of super-phosphate and potash salt. These two materials, rightly applied, have proved extremely profitable for corn. According to the very emphatic testimony of these experiments, Vermont farmers will find it very much to their advantage to raise corn by the aid of super-phosphate or bone-dust and muriate of potash.

As to the efficiency of the materials separately, the nitrate of soda by itself was seldom of much use, the sulphate of lime was frequently, the muriate of potash very often, and the super-phosphate generally profitable. Doubtless considerable of the effect of the super-phosphate was due in many cases to its sulphuric acid and lime.

Artificial Fertilizers vs. Farm Manures.

As appears from the figures the "complete" chemical fertilizer brought a larger, and the mixture of super-phosphate and potash salt about the same, average increase as the farm manures, taking these as actually used. The quality of the produce was generally as good or even better with the chemicals than with the farm manures. Potatoes especially were finer in quality and less disposed to rot with the artificial fertilizers than with the farm manures. To counterbalance the better produce with the chemicals and their greater convenience in handling and applying, the farm manures have the advantage of being in general more lasting in their effects.

From results for details of which there is not room here, it would seem that an excellent and, perhaps, for most farmers, the best way to use chemical fertilizers is to supplement a light dressing of farm manure. The results from thus using the two together have been very satisfactory.

The proper way is to make the most and best manure possible upon the farm, and piece out with such materials as experience and experiment show to be profitable.

Methods of Applying the Fertilizers.

As between applying artificial fertilizers broadcast or in the hill or drill, the testimony of the experiments is, on the whole, in favor of the former. The best results in the majority of cases came where the fertilizers were sown broadcast. In some of the very best, the materials were scattered over a strip a couple of feet or so wide along the rows. Such concentrated materials, when too close to the seed, are apt to

injure the plant, especially in dry weather. The nitrate of soda and muriate of potash often do harm in this way.

Our French Letter.

Small Farmers in France.

Messrs. Editors American Farmer:

The *metayer* is a small farmer, holding from 30 to 150 acres, which he cultivates for the landed proprietor on the general condition of receiving one-half of the profits and paying all the fiscal taxes. During the period of the Roman domination down to the middle ages, the *metayers* were riveted to the soil, and they were slaves. During the last century the *metayer* was still in a state of serfdom, and up to 1850 he was akin to a domestic servant. At present his tendency is to become partner with the landlord. In any case his social and material position is vastly ameliorated, and this reacts beneficially on French agriculture in general. There is no bail executed between the contracting parties as a rule; the customs and usages of the locality suffice; and a metayer, if he desires to leave his holding, is only bound to give three months notice prior to the first of November. The bone of contention is—deducting every January, the epoch when accounts are balanced, a round sum in cash to pay the *property tax*. Many metayers resist the purchasing of improved implements and commercial manures, so that several owners of farms invest in this expenditure at their own risk. However, both parties are almost free from the clutches of their common enemy—the "middle-man."

The French Tariff on Agricultural Productions.

The Chamber of Deputies has voted the agricultural section of the general tariffs, which fixes the duties below which the government cannot descend when negotiating commercial treaties. They are as follows: stallions and mares fr.30 each; fillies 18; oxen 6; cows 4; bulls 6; heifers and young bulls 2; calves half a franc; sheep and pigs 1¼. For fresh meat fr.1¼ per 2 cwts.; salted fr.4, and canned 8; extract 4. Uncarded wool is admitted free, as also animal fats not employed as food. Eggs will have to pay fr.8 per 2 cwts.; fresh butter 13; salt ditto 15. The old tax of 12 and 24 sous per cwt. will be retained on wheat and wheaten flour; but rye, barley and buckwheat may enter free. The protectionists proposed that all imported produce identical with that raised in France ought to pay an impost of 10 per cent. A bullock valued at fr.500 would thus have been subjected to a tax of fr.50 instead of 6. The relief French agriculturists need is not prohibitive impost duties, but reformation of the system of home taxation. Land ought not to be subjected to the same tax as house property, and too much of the national revenue is raised at the expense of the rural districts that ought to be levied on the towns. This is a question not of favor but of equity. Another difficulty: an immense immigration is going on from the provinces to the towns, so that manual farm-labor is scarce and dear. The immigrants forget that if wages be higher in cities so are the expenses of living, and the opportunities for saving are generally not to be found in towns. Respecting agricultural instruction in the primary schools: teachers who have no practical acquaintance with farming, ought to confine their instruction to the rudimentary sciences, not to crude criticisms of neighboring modes of cultivation that too often necessity compels to be adopted.

Farming Out Infants.

Absenteeism on the part of proprietors has to be added to the increasing depopulation of the country districts. To remedy the latter, the 150,000 abandoned and illegitimate children that the State has annually to support, are being brought up to farm labor. That total does not include the juvenile delinquents who are sent to such reformatories as Mettray. The Public Charity Board farms out 100,000 of the children between one and ten years of age, mostly to licensed nurses in the provinces. Until the nurses were subjected to severe inspection, the death-rate of these infants varied from 40 to 90 per cent. Between 10 and 12 years the children are next farmed out to tenant cultivators—a few being handed over to tradesmen. When 12 years old the Board considers the child capable of gaining its livelihood, and so leaves it to its fate. The poverty, ignorance and too often immorality of the families where the infants are placed, and the miserable pittance allowed for their maintenance, defeat the salutary ends. Judge Bonjean proposes to establish monster agricultural "colonies" for foundlings and orphans, bringing up and morally educating their inmates till fit to battle for a position in life.

Sheep Farming

In this country continues its satisfactory evolution—to increase the production of meat and wool without injuring either. France produces more of these at present than she has ever done at any period of her existence. The wool has nothing to fear from Australia or South America; it seems to possess a special length of fibre, combined with fineness and strength, which are partly due to geographical advantages. French Merino wool is reported to have an exceptionally high reputation for the loom. Twenty years ago the Paris markets were only supplied with old sheep, while now the greater part of the animals offered possess their milk teeth. Twenty years ago a flock was only renewed every seven years; to-day it is effected within three. The quantity of meat has increased, and consequently that of the wool; and it is evident that six fleeces furnished by two animals in three years are more valuable than six fleeces from one sheep arrived at six years old. Sheep rearing as now understood here: never keep ewes and rams, save when they exhibit special hereditary wool qualities, beyond the adult age. A ewe is rarely allowed to bear lambs more than twice, and is never tupped till aged fifteen months, when she is precocious, or when possessing four adult teeth. This involves of course the disposal of all ewes each year that have lambed twice, and the sale of wool or meat can be regulated accordingly.

Electricity for Plowing, &c.

M. Felix, director of the sugar factory at Sermaize, in the department of the Marne, now gives weekly exhibtions of plowing by electricity as a motive power. I have already described the system in full, and the application of electricity to drive threshing machines and work windlasses. The Gramme machine, which generates the electricity for illuminating the mills, also turns a crank at a relatively large distance in a field, but in the transmission of the dynamic current along the wire there is a loss of some 50 per cent. of power. Pending the discovery of a means to economize this waste, the experiment possesses no practical value. It is sense that ever justifies expense.

The New Fodder Plant.

The cultivation of the new oleaginous pea (*soja hispila*) is making progress as an article of food and of fodder. The plant grows to the height of about twenty inches; the pods are nearly two inches long and contain about three seeds. It is sown between the middle of April and May in rows twenty inches apart, and seven between the plants, just as for haricots. The soil ought to be rather dry than humid, but not too dry; three seeds are dibbled into each hole. The *soja* resists cold better than peas or haricots; it can be easily threshed; and in a dry state, if steeped before being cooked, it swells to double its volume. It is markedly rich in nitrogenous and fatty matters. M. Givet, an agriculturist of the south of France, has for two years been very successful in preserving green vine leaves in trenches on the Goffart plan. Sheep and draught bullocks eat it with avidity.

Horses—Their Diseases, &c.

Every year a census is taken of the horses in France fit for requisition by the military authorities. The new plan has led to the discovery of animals suffering from contagious diseases—glanders for instance—of which eighty-four horses, being declared affected, were at once ordered to be slaughtered, and one hundred and seven were placed in quarantine for other maladies.

The Horse Show in the Palace of Industry presented nothing remarkable this year so far as breeds, encouraging which is the object of the Hippic Society. The show is becoming a mere reunion for horse-dealers, and a kind of circus where owners can show off their skill in driving and taking hurdles.

The Phylloxera

Keeps on the even tenor of its very bad way. Vineyard proprietors continue to form themselves into societies to resist the invasion of the bug, and immersion, sulphuret of carbon and sulpho-carbonate, are the preventive measures most in favor. Perhaps the first and imported vine-stocks from America are the best.

Nitrates for Beets, &c.

Prof. Marcker, of Halle, has studied the action of nitrate of soda on soils and beet in 43 different farms in Saxony. It is an error, he says, to conclude, that if one-half of the salt be applied in the autumn, a favorite method, it will be washed out of the soil. When this salt sells at fr.23 per cwt., it is better to employ it than sulphate of soda at fr.16. Superphosphate on guano is positively detrimental; that from Baker's Island hastens the maturity of the plant, but gave no augmented yield different from a soil that received no manure at all. Salts of potash do not check the beet-worm disease unless when applied at an early stage of the insect's development. The peculiar eel-worm that attacks rye and cuts the crown of the plant, can only be conquered by not growing that plant on the same soil for eight years.

Beet-Sugar in Russia.

All spring sowings have been made under favorable conditions, and winter crops have largely regained in promises; beet is satisfactory and forage plants most hopeful. In Russia beet cultivation has spread rapidly—half a million of acres are under that crop, and the factories for sugar number 300. She exports beet sugar now to France. In 1876 Russia made her first exportation of sugar—half a ton only—to Western markets; now she sends 65,000 tons yearly across her frontiers. The region most favorable for beet-culture in that country lies between 48 and 54 degrees of latitude. The sugar fabricants are mostly beet-growers, and hemp succeeds beet in rotations. The culture of the root gives a net profit of fr.140 per acre.

Average prices per cwt.—wheat, fr.16; rye, 11; barley, 10½; oats, 10½; hay, from fr.94 to 136 per ton; wheaten straw, 74 to 96; rye, 96 to 110; bran, fr.9 per cwt.; maize, 7½; beet sugar, 30; butter, fr.1½ to 3½ per lb.; beef, first quality, live weight, 12 to 20 sous per lb.; mutton, 17 to 19.

Paris, France, April 22, 1880. F. C.

Progress of Agriculture and Horticulture.

The advance in agriculture within the last half century is in keeping with, or will probably exceed, any other branch of business, if we may except railroading. In 1819 Mr. Skinner commenced the publication of the *American Farmer*, the first regular periodical devoted to the interests of the farmers of this country. At that time there was no association of farmers in existence, as well as we can remember (and the writer was in the harness of the press at the time.) Since then hundreds of periodicals have sprung up, had an existence, many of them comparatively brief; but yet the number still alive can be counted by the scores; in addition to which most of the principal dailies, as well as the country papers, have a regular department devoted to agriculture; and the number of agricultural societies and clubs, besides granges and other associations whose connexion with agriculture is most intimate, are far beyond the estimate made by our venerable friend and cotemporary, whose remarks upon the subject of "progress" we herewith annex, received from the author, who kindly remembers the old

pioneer and its editors whenever he has anything peculiarly good to be presented to the world, in the line of life to which he has for so many years devoted himself.

At the 40th anniversary of the Massachusetts Agricultural Club, held at Boston last month, the members and their ladies, with a few invited guests, were present. The president of the club, the venerable Marshall P. Wilder, and Mr. Aaron Davis Wild, the only two survivors of the originators of the organization, were present, together with Gov. Long, Judge Hy. F. French, First Assistant Secretary of the Treasury, who came all the way from Washington to meet and greet his old friends and brothers on this red-letter day in the club's annals, and many others well known to the agriculturists of the United States.

Mr. Wilder, in his address to the club, gave a brief outline of its history and the numerous societies which sprang up from its influence, and the many eminent agriculturists and scientists of our land who have aided in the improvements which have distinguished the progress of our age. After acknowledging that it was "through the loving kindness of our Heavenly Father they were permitted to participate in the pleasures and privileges of this occasion," Col. Wilder added:

"My friends, I have lived to see great advances and improvements in the agricultural and horticultural world. When I commenced the cultivation of the soil there were but a few agricultural societies in our land, and not one horticultural society on our continent; now these are spread all over our country, and there are borne on the records of the Department of Agriculture at Washington the names of fourteen hundred similar institutions. Fifty years ago the products of our soil were scarcely thought worthy of a place in the statistics of our industry; now our exports of these amount to nearly six hundred millions of dollars annually, and our Western granaries are treasure-houses upon which the world may draw to make up their deficiencies. Then the supplies of fruits were limited to a few varieties, and to a few weeks in use; now our markets abound with fruits for all seasons of the year. Then the only strawberry in our market was the wild strawberry from the field, and for only a short time; now we have this delicious fruit by the facilities of transportation for two or three months, and in such quantities that we have received from the city of Norfolk, Va., 16,000 bushels in a single season; and so great has been the interest in this fruit that my register contains the names of more than three hundred and fifty kinds of strawberries which have been under cultivation in my day. Then there were no American grapes cultivated in our gardens except here and there a vine of the Catawba and Isabella; now there are nearly a hundred varieties of American grapes under cultivation in our land, and the grape may be had for six months in the year; and so extensive are our vineyards that an order for our American wines to the amount of one hundred thousand gallons has been recently received from Europe. Then the cultivation of the pear was limited to a few varieties; since which the gardens of Manning, Hovey and Wilder have embraced more than eight hundred varieties of this noble fruit. Then no exports of fruit of any note had been made; now Boston alone has shipped to other places half a million barrels of fruit in a year, and the export of apples from this country has amounted to nearly three millions of dollars in a year.

Did time permit, I might go on and speak of the wonderful exhibitions of the Massachusettes Horticultural, the American Pomological, and other societies of our land, rivalling in excellence those of the far-famed cities of the Old World. Fifty years ago, neither Mr. Hovey, myself, nor, so far as I know, any other person in our country hybridized a fruit or a flower; now our country abounds in new varieties which are esteemed in Europe as equal to any they possess. And while I would not extol ourselves, I must not fail to mention the grand improvement in ornamental culture which has taken place in our own vicinity. Then we had no such splendid villas and grounds as Messrs. Hunnewell's, Payson's, Sargent's, Gray's, Hayes' and others, which are such an honor to our own commonwealth and country. But I must not trespass further on your time. Suffice it to say that when I reflect on the good which this club has accomplished, I am devoutly grateful that my life has been spared until this time, and that I am permitted to share in the blessings which have flowed from its labors. Ere long all our present members will have ceased from their labors on earth, but I trust our club will live on and on, and prosper in the future as in the past, and I hope we all may meet at last in those celestial realms

> Where rivers of pleasure flow o'er the bright plain,
> Where parting of friends shall ne'er come again.

A number of other speeches were made on the occasion, which our space will not permit us to give; but in some of them beautiful allusions were made to the venerable President, which we cannot omit:

"Rev. Dr. Means spoke of the indomitable and unabated pluck of Mr. Wilder, who, at fourscore, was still studying and laboring in the interest of agriculture, and likened him to a second Antæus, inasmuch as he seemed to gather strength from the ground. Judge French said he had to-night found out the meaning of the line, "Whom the gods love die young." It meant that though they lived to fourscore and ten, whom the gods love never grow old. Rev. Leighton Parks and Hon. Chas. L. Flint of the Massachusettes Board of Agriculture spoke briefly, and the exercises were appropriately brought to a close by singing "Auld Lang Syne," Mr. Hovey leading at the request of Mr. Wilder."

Keswick (Va.) Farmers' Club.

The club's April meeting was held at the residence of Mr. Jno. W. Goss. The president, Mr. Mason, appointed a committee to examine the farm; but the whole club joined in the tour of inspection, on which many points of interest were observed. From a report of the proceedings which we find in the *Charlottesville Jeffersonian* we make the following extracts from the report of the corresponding secretary:

The wheat crop, at the time of examination, which had received 250 lbs. of fertilizer on it on their land, looked promising, and most of it showed good preparation of the land and careful seeding. The hogs, 75 in number, are in poor order, and while the pigs, 30 or over, look better, the committee think he keeps too many for profit. The sheep, about 220, and lambs, 208, look remarkably well considering the large number kept and cold dry season, and show the good effect of the orchard grass reserved for them. The committee were especially pleased with the orchard of about 1,500 trees, chiefly winesaps and pippins, and consider it the best they have ever seen and excellently pruned and cared for, while the prospect for an enormous crop of fruit this year is fine. The fencing is very good, and farm buildings ample and well arranged, the stable a particularly convenient one, but there is a scarcity of gates and the bridges are in bad order. The apple-house and arrangements for storing and keeping the large crop raised yearly and the fixtures for making cider and vinegar in large quantities met our especial commendation, being the most convenient and economical we have ever seen in use. The general appearance of the farm shows careful and judicious management, the area of land well taken in grass being unusually large, and the stand of grass remarkably even and regular throughout the entire fields seeded. Mr. Goss sows orchard grass principally, thinking it the best for general purposes, in which the committtee concur; it being observed that Mr. Goss aims at the maximum production of meat, wool and fruit, the more ordinary staples of corn, wheat, &c., receiving much less attention in comparison. The committee was directed to obtain from him a more detailed and fuller account of his system of farming than was possible on this occasion, with length of time since he adopted it and results, and to report more fully to the next regular meeting.

The subject for discussion at this meeting, viz: the proper management of sheep, was next brought up and fully discussed, there being very general unanimity among the members present upon the following essential points: 1st, that when properly managed sheep are always profitable; 2d, that a proper management embraces the following as its chief conditions: that sheep should be well sheltered in inclement weather and given an extra allowance of food; that grass or other green food be provided for them during winter and especially after lambing, to which end a good field of orchard grass should be reserved, unpastured during the preceding season, and green corn fodder, preserved by the "ensilage" process, if found practicable on trial, as several members believe it will be; the sheep should be fed in pens adjoining the shelters; the pens kept well littered to prevent disease, and the manure, which will be very valuable, carefully saved; when grass cannot be had on account of snow covering the ground, or for other reasons, early-cut clover hay, with some grain, is the best food; and Dr. Wm. Shackleford strongly advised giving sulphur occasionally in small doses at all seasons as beneficial to the general health and a preventive of vermin. In hot weather pasture should be changed at frequent intervals and salt freely given at all times, and care should always be taken not to overstock our land.

In regard to the breeds most suited to our farms, there was shown a very decided difference of opinion, Messrs. H. M. Magruder, Dr. Shackleford, George R. Minor and others believing that the Cotswold is the most profitable, for the reasons that this breed yields more than double the amount of wool and much larger and heavier muttons, while the lambs are very nearly as good for early market as from Southdown or any other breed. These gentlemen advise beginning with as good Western ewes as can be had, using a thorough-bred Costwold buck, and saving the best ewe lambs each year, which should not be allowed to breed until 2 years old, and by continuing this process breed up to a flock of high grade Cotswolds. Messrs. Jno. W. Goss, Jr., and W. W. Minor, Jr., on the other hand thought it more profitable to breed from Western ewes altogether, using a thorough-bred Southdown or Shropshire buck, selling all the lambs every year and selling the entire flock of ewes every few years, while still young enough to fatten well, say at 4 to 5 years old, and replacing with younger sheep. They urged in behalf of their system: 1st—that the native sheep being so much more hardy and less liable to disease, at least double the number can be well kept on a given quantity of food, as of the large improved long-wool breeds. 2d—that the lambs thus produced will sell for as much in the markets as those from Cotswolds. 3d—that the amount of capital invested is greatly reduced, and risk of heavy loss from ravages of dogs and other enemies to which sheep are always liable correspondingly decreased; while if such loss should occur, a flock can be easily replaced by another equally as good on this system, which is impossible with an improved Cotswold flock, without paying very high prices, or the loss of several years time. 4th—that while the Cotswold and like breeds may and do thrive well on some few of the best farms in this section, which are unusually rich and well supplied with grass and other needful food, they would rapidly deteriorate and soon die on the ordinary fare attainable on most of our farms, whereas the hardier Western sheep would get a good living on the same land, with tolerable care and attention. 5th—that since the native sheep can be kept in so much larger numbers, they will so much more greatly aid us in cleaning our foul lands of sassafras, briars and such pests. They thought the only real disadvantage of this system is the small

yield of wool as compared with Cotswolds, and this they consider much more than counterbalanced by the advantages above enumerated.

The Dairy Interest.

The following is from a paper submitted at the late meeting of the "National Association for the Prevention of the Adulteration of Butter:"

The production of butter and cheese in the United States, as a specialty, began in the eastern part of New York State, and then extended westward until it has become its leading industry. Fifteen years ago Chicago merchants obtained their supplies of cheese from the East; now 100,000,000 pounds pass through that city annually for New York. The value of the land and stock employed in furnishing milk, butter and cheese in the United States is estimated at $1,300,000,000.* Over three thousand factories are engaged in the manufacture of these articles, besides the tens of thousands of private dairies. One manufacturer in western New York has over forty factories. Others in different parts of the country have from five to thirty each. There are several firms in New York city which handle from $2,000,000 to $3,000,000 worth of butter and cheese each, annually. The annual production of cheese in the United States is estimated at 350,000,000 pounds, and of butter about 1,500,000,000 pounds. The value of the two is about $350,000,000—$50,000,000 more than the wheat crop, one-seventh more than the hay crop, one-third more than the cotton crop, and only one-fifth less than the corn crop. There are 13,000,000 cows in the United States, which is over six times the number in Great Britain and more than twice the number in France. The cheese and butter exported this year have paid freight to ocean transportation companies amounting to $1,000,000, or almost enough to support a line of ocean steamers. They pay to railroad companies annually over $5,000,000, and milk pays nearly as much besides. The annual production of milk in the United States may be safely valued at $500,000,000. This does not cover the vast quantity and value of milk consumed by calves before they are old enough to depend on other foods. "Who will venture, then, to say," says the circular, "that this is not truly the great national industry of the country, or that it is not worthy of consideration and protection? It concerns more hearts and homes than any other in the land. And every pound of oleomargarine fraudulently sold strikes a death-blow at an industry which has contributed in a large part to the nation's prosperity."

*These figures are doubtless exaggerated.—*Eds.*

Oleomargarine.

The public attention in every section of the country is being aroused into opposition against the introduction of this imitation of butter, not only on account of its interference with one of the most important and largest of our agricultural industries, but also as to the deleterious effect it is likely to have upon the health of the community, being considered as a dangerous food. The *Chicago Live-Stock Journal* is very emphatic in its condemnation, and says:

This counterfeit of butter is being pushed with brazen effrontery upon the markets, both in this country and in Europe. It is manufactured by large corporations, who have given a new proof of the saying that "Corporations have no souls," and, in this case, no decency. We gave, some months ago, the statements of microscopists to show that it is easy to distinguish it from genuine butter under the microscope. Oleomargarine shows "feathery crystals," and real butter "presents the uniform appearance of fat globules, perfectly free from any crystalline forms, except those of chloride of sodium, or common salt."

This statement was made by an expert microscopist, Prof. John Michels. And he also stated that he found in it living germs, which might be very dangerous when taken into the human stomach—that the degree of heat to which this fat is subjected in the manufacture of caul-fat butter, (120 degrees F.,) is not sufficient to destroy these germs. These companies took the alarm at these statements, and got certificates of several professors, among others of Prof. Brewer, of Yale College, that "trichina and worms do not appear in caul fat." But Prof. Michels goes further into the merits of the matter, and in a late paper in the *American Journal of Microscopy*, quotes the French patent under which it is manufactured, in which they state "that the stomachs of two pigs or sheep should be chopped up with a certain amount of fat, on account of the pepsin therein contained," and he found that this practice was in use in New York oleomargarine manufactories. He thus shows that all kinds of fat and grease are used in its manufacture, and that, unless such was the case, there is not caul fat of oxen enough received in New York to keep one of the large factories going, while there are seven of them. He then gives a letter written to him upon this subject, from Dr. W. H. Dollinger, of Liverpool, who has great reputation as a microscopist. He speaks of a series of experiments he has been trying upon these low organisms or germs. After he applied to these devoloped forms a temperature of 142 degrees, he says:

"They were rendered inactive for a while, but sooner or later revived. * * * But besides this, we know now that the germs of this series of organisms require at least 212° to 235° for their destruction in fluid; consequently it is no coloring of facts to say that the temperature (120°) reached in the manufacture of oleomargarine, is perfectly innocuous to such organisms of this kind as the refuse fats may contain.

"Quite as serious a matter is that of the introduction, through its means, into the human intestinal track, of eggs of entozoa."

Now that butter has been worth, in New York, from 30 to 40 cents per pound for some six months, it has greatly stimulated the manufacture of this vile stuff. The law requires each package to be plainly branded "oleomargarine," but the law is evaded in every way possible. They now resort to the fraud of using from one-

quarter to one-third good creamery butter mixed with it to give a real butter flavor. But the other two-thirds may contain the germs of death. Not one in a thousand who eats it, knows that it is not genuine butter. But it now seems that nothing short of a scientific examination will awaken the public to the danger of using such a vile compound, as to provide some means of preventing its fraudulent sale.

The dairymen of the whole country are interested in punishing the perpetrators of this fraud. For it will lessen the sale of honest butter, first, by taking the place of from 50 to 100 million pounds of the real article, and, secondly, will so disgust the public when its true character shall be known, as to lessen the consumption of butter for a considerable time through the fear that they may be eating the spurious article.

The Dairy Cow.

At a meeting of the Massachusetts State Board of Agriculture, Mr. E. E. Hyde, of Connecticut, read a paper on this topic. He said:

This subject has been elaborated and presented, not so much under this simple heading as in various discussions concerning the comparative merits of different breeds of cows for dairy purposes, by those specially engaged in breeding dairy stock. The Short-horns, the Jerseys, the Guernseys, and the Ayrshires, are many of them owned and bred by gentlemen of wealth and scientific investigation, who have a taste for breeding improved or fancy stock, as it is called, and have the facilities of giving such care in feed and shelter as the ordinary farmer cannot bestow. They have thus been working or endeavoring to work, out such problems as could not otherwise be solved. In this presentation of various breeds for public favor, each has found the *best* "dairy cow" in his respective class, and has given us remarkable results in regard to the production and quality of milk and butter, which you all have seen recorded. This presentation from so-called scientific breeders and fancy farmers is open to criticism by ordinary practical farmers.

Ayrshires—for hardiness, for quantity of milk of good quality in proportion to the amount of food—have never, perhaps, been surpassed; while they are not so rich in butter qualities as some other breeds. Yet we have some remarkable accounts of their products and excellency in this line, among some of the first importations. We have the report of E. P. Prentice, of Mount Hope, of a heifer, only seventeen months and three days old, that weighed five hundred and fifty pounds, producing during the last week in May, 1854, nine pounds and three-quarters of butter. My experience with them would not warrant me in making so favorable a report, so far as butter is concerned.

The Channel Island cattle embrace the Alderneys, Jerseys and Guernseys. You are all familiar with their attractive faces. For color and quantity of cream, and the facility with which it is manufactured into butter, they lead the list, and are, on this account, especially popular. But they have been too closely bred, and are, therefore, too delicate and effeminate for the ordinary practical farmer, while they are, perhaps, of all our blood cattle, the largest eaters as compared with what they produce. For many purposes they do not equal some other breeds. Thomas Motley, of Jamaica Plain, reports one of his cows as yielding five hundred and eleven pounds and three-quarters of butter from the eleventh day of May, 1853, to the twenty-sixth day of April, 1854. The last three months it took five quarts of milk for one pound of butter.

THE SHORT-HORNS.

These valuable and noted cattle have been practically known to us for many years They are celebrated all over the country for their large size and symmetrical beauty, and for the fabulous prices they have brought. There was a heifer calf of this breed sold in 1875 for twenty-seven thousand dollars,—more valuable, indeed, than the golden calf which Aaron set up for Israel to worship. It was the highest price ever paid for a year-old creature in all beastdom.—This calf's mother and her progeny sold for over a hundred thousand dollars. Unfortunately they have not been bred so much for milk of late as formerly. There was a time when they stood in the first rank for dairy use: I am not certain but their constitution while thus bred was becoming impaired. If so, the evil has been remedied by an infusion of new blood from a branch of the family more recently imported. Their size, however, is against them for the dairy, on most of our New England soils. With the cross of the bull Logan, out of Louise, we had some of the most valuable milkers we ever had in our section. Perhaps I ought to say here that the pure-bred cow Double Rose was a remarkable milker, giving me at one time fifty-nine pounds of milk daily. But she was too large and heavy to thrive well on my light and rather dry pastures. Otherwise I should, for my own use, look among the best milkers of her breed for the best dairy cow,—subject, perhaps, to a single careful cross with a Devon or a Jersey bull.

The Dutch cattle are spread over the country, and are claimed by their breeders as superior to all other blood stock in the quantity of milk they give Some accounts of them justify this statement. But the quality of their milk is not rich, and the general make-up of the animal is such we cannot recommend them as the dairy cow. I have no means to judge of their grades

DEVONS.

General reputation does not place the Devons, for gross production, as high as the others that I have mentioned; but for certain uses they are unsurpassed, being the most hardy and vigorous of all the classes, yielding milk surpassingly rich in all its qualities, and of most agreeable flavor, and with constitution unimpaired. They have been greatly undervalued for dairy purposes. P. Holcomb, of Newcastle, Del., in the summer of 1843 made from one cow a hundred and seventy-four pounds and three-quarters of butter in twelve weeks, or an average of fourteen pounds and nine ounces per week. During one week she made nineteen pounds, and in

three days nine pounds and a half. I think W. Buckminster, of *The Massachusetts Ploughman*, invited, through his paper, gentlemen to visit his herd and test the quality of the milk, four quarts of which he claimed (I speak from recollection) would make a pound of butter. I would do no injustice to any class; but I believe that for some reason, perhaps it is *fashion*, this class of stock has not fallen into the hands of gentlemen with as ample means, and who have the taste or the facilities to feed, and test their merits, and develop their milking qualities, as has been the good fortune of some other breeds. The cross with the Devon bull is a good one on any stock and for all purposes. From this cross on the Short-horns I have had a cow that made nineteen pounds and a quarter of butter per week.

My Devon cow (Gem 134) made two hundred and fifteen pounds and a quarter of butter in a trial of ninety-five days,—a trifle over two pounds and a quarter per day.

Now I have briefly referred to various classes of thorough-bred cattle, with reference to their production in their early introduction here. While the breeders have applied their capital, energy, and all the science they possessed, in the endeavor to give us the highest type of a dairy cow, yet they have fallen far short in giving us what I consider the *ideal cow*. We can describe her; but she does not exist. The cow I want must be hardy, of good constitution, well-formed, no waste flesh or bones to carry, and giving a large quantity of milk, rich in cream and all the other elements of milk. As I said, there are very many excellent cows, but none that combine in the highest degree the excellences of all the different classes. How, then, shall we attain the "dairy cow?" If at all for New England, it must be in the cross of some of the thorough-breds referred to, or, more probably, through a cross with our so-called native cattle.

The natives include everything but pure-breds and grades. Their early history furnishes us with many remarkable cows, among which the Oakes cow is the most noted, and one of the best types of a purely milch cow. She produced in 1816 four hundred and sixty-seven pounds and a quarter of butter from May 15 to December 20, at which time she was giving over eight quarts of milk a day. More recently comes the Holcomb cow, excelling them all in the dairy yield. I have not the record at hand.

Now this opens wide the door for us, as practical men and farmers, to experiment in the most judicious and economical way in cross-breeding to attain the golden prize. But we cannot "gather grapes from thorns nor figs from thistles," nor good milk nor good yellow butter from white birches or our low meadow broad sward.

To use a grade bull is to ignore agricultural science and progress, and all the well-defined principles laid down for perpetuating the valuable qualities at which we are aiming. Now, let us work as assiduously and faithfully as do those who engage solely in breeding blood stock. Let us select from the native cow such as have been longest bred in the direct line of the very best milking family stock. In all cases use a pure-bred bull from the best line of milking stock in both sire and dam, and with all the milking characteristics developed in the bull. If this rule should be adopted in all cases of breeding grade stock, and judiciously carried out, the increase of milk and butter in round numbers would be astounding, and we could reasonably look for the near advent of the ideal dairy cow, and those who now persist in using grade bulls would be imperative in their demand for pure-breds.

The Best Five Breeds of Sheep.

From one of our exchanges, which does not give the authorship, we take the following well-digested account of the several breeds of sheep most favorably regarded in this country:

First—The Merino is a breed originally Spanish, but now generally existing over Europe and the United States, and very extensively in Australia. Merino wool constitutes a great part of the wealth which flows into the new continent from its exports. The Merino has large limbs, and the male has large spiral horns which do not rise above the head. The skin of the neck is loose and pendulous, the cheeks and forehead bearing wool. The fleece is fine, long, soft and twisted in silken spiral ringlets abounding in oil which, attracting dust, gives it a dingy appearance until scoured, after which it is silky and white. This variety is valuable mainly for the excellence of its wool.

Second—The Leicester sheep is regarded in Europe as one of the most valuable of the long wools. This breed, in the present improved condition, is the result of the skill and care of Mr. Bakewell, of England, who, soon after the middle of last century, began to make experiments for the improvement of the old Leicester sheep. It was then a large, coarse-boned sheep, not easily fattened, with coarse wool weighing about ten pounds to the fleece. The new Leicester, or present breed, has wool moderately long, and of better quality, weighing seven or eight pounds, and is easily made very fat. The color is white, and both sexes are horniless with bald face tinged with blue, and low carriage. Other breeds of long wools in England have been greatly improved by crossing with this—the Lincolnshire, Romney, Marsh, etc. In this country the Leicesters are large and coarse, but easily fattened, and with good mutton, the wool moderately long, but stiff, and without gloss. Altogether this variety is not generally in great esteem.

Third—The Lincolnshire is a large, bony animal, takes long to mature, has a long, flat, bony head quite bare of wool, with a good fleece, rather thin, slightly kinky, with some gloss. But altogether the Lincolnshires have greatly improved of late years, their legs being shorter and the wool more glossy; yet the fleece not being equal in quality to some other breeds, they have not met with general favor, and are rarely adopted by our wool-growers as a breed.

Fourth—The Southdown is one of the most popular breeds both in England and the United

States, and have, by crossing, produced what are called Hampshiredowns, Shropshiredowns, Oxforddowns, and perhaps others, all larger and coarser, but retaining the Southdown marks and characteristics, all producing valuable wool and making good mutton. But the Southdown must be regarded as the head of all these, both for wool and table use, the crossing of this breed having added nothing to the originals in either quality. The Southdowns are exceedingly neat in form, both in head and body, with gray face and legs well covered with wool, the fleece short, thick and soft, the outer surface often appearing as smooth as the nicely clipped. The body is straight, with well sprung ribs, broad, level back, and deep flanks, all well covered with wool. This breed stands at the head of all breeds of sheep for superior table qualities, but does not rank so high for quantity and quality of wool. The Southdowns derive their origin and name from the chalkdowns of the south of England, but are not adapted to a cold climate.

Fifth—The most important and valuable of all breeds of sheep is the Cotswold or Gloucester, the wool of which has been held in great esteem since the fourteenth century, and has generally commanded a higher price than any other. In 1424, Edward VI., of England, sent a present of Cotswold rams to Henry of Castile, and in 1468 he sent a similar present to John Aragon. So the Cotswolds reach back to a right honorable age and right royal patrons. But in modern times the Cotswolds have been greatly improved by crossing with the Leicester, producing a shorter wool and better mutton than in former times. The Cotswold of to-day has a long, straight body, well rounded ribs, flanking low down, good, full twist, broad, flat back, full and low in brisket, a neat, stylish head, broad between the eyes, neatly tapering mouth, short legs, with head, jaws and legs covered with wool, and altogether a pretty and stylish body, covered with fine, long, wavy wool, which is glossy and very valuable, and in great demand. The face in this breed is sometimes gray, but not generally so. They are more docile than any other breed, and take on flesh very kindly, making good mutton, but are not considered in this respect equal to Southdowns. Yet, all things considered, the Cotswold is the best and most profitable breed for the wool-growers, and we would earnestly advise them to continue to improve their flocks until they shall be as near thoroughbred as possible. It costs as little to raise and take care of a good animal as an indifferent one, while the thoroughbred will yield a fleece from twelve to twenty-five pounds, worth twice as much per pound as the fleece of a common sheep, which would weigh three or four pounds.

Heavy Clip of Wool.

Messrs. Editors American Farmer:

I have clipped some choice specimens of my Cotswold sheep and have realized the following results: 19½ lbs.; 18½ lbs.; 16½ lbs.; 15½ lbs.; 14½ lbs.; 13½ lbs., and 12½ lbs. to the fleece, besides raising lambs. I have not sheared my entire flock yet, but expect to get from 12 to 15 lbs. to the fleece from 35 ewes. I am receiving orders already, and owe to your wide circulation in many respects my success,—defying competition in raising heavy fleeces and well-grown stock.

I am yours truly,

EDWARD C. LEGG.

Kent Island, Md., May 18, 1880.

The Poultry Yard.

By G. O. BROWN, Montvue Poultry Yards, Brooklandville, Md.

Appearance of Young Chicks.

Amateurs and others, who are not familiar with the appearance of young chicks while in *down*, are apt to conclude, when the chicks first hatch, they are not pure bred, as they have allowed themselves to imagine the young chick should represent the mature bird to such a degree at least that any variety would naturally be recognized. Such, however, is not the case. Very few of the pure breeds of fowls show as young chicks the characteristic plumage of their kind. Poultry breeders, who have made experience their teacher, can readily recognize the young chicks of any pure breed, and in most instances as quickly detect a chick if it shows any evidence of being cross-bred. Poultry-breeders have been condemned because young chicks of certain breeds did not hatch adorned with adult plumage. To give an idea of how entirely different young chicks appear from the old fowls of their kind, we will notice a few. Neither space nor time have we to mention *all* the different breeds: Black Spanish, for instance, are not when first hatched a pure black, but are black on head, upper part of neck and body, while the rest is white or grayish-white. There is no sign of the characteristic white face; but when the chick is a couple of months old the ear-lobes begin to get white, and also the face, though the latter is not in perfection until the bird is from 8 to 14 months old. The legs are only darkish, and in some instances the feet will be a shade or so lighter than the legs; yet in due time the slaty-blue leg is developed. The Dominique and the Plymouth Rock chicks are similar in appearance when first hatched (the combs excepted of course.) The chicks are rather dark on backs and grayish elsewhere, with an inclination to be white on the breast. Legs sometimes are quite darkish, but gradually turn yellow. Black-breasted Red Games and Brown Leghorn chicks are quite alike. The games have a broad stripe (dark chestnut color, rich and velvety in appearance,) starting at a point on the head like a letter A, and from the base of the head to the entire length of the body of the same width; on each side is a narrow stripe of white, followed by a stripe of brown, and the rest of the body is a brownish gray. The brilliant stripes are very handsome and give the chick the appearance of a young partridge (quail.) Brown Leghorns are marked the same, except the centre and other dark stripe is a lighter color, while the body color is a little more of a maroon hue and their legs nearer a yellow.

Partridge Cochins are a rich chestnut-brown on the back, and blend off nicely to a lighter hue to under part of body. Dark Brahmas are grayish-mealy, and none of the characteristic pencilling is seen until the chick begins to develop feathers. Light Brahmas and *White* Cochins, except combs, appear the same, and some strains of each when first hatched appear quite buff in color, but generally come out white. Hamburgs, so much admired by all for their wonderful systematic feather pencilling or spangling, are naught but dirty grayish little fellows, with a few black spots scattered around promiscuously on their head and upper part of neck. Of the pure *white* breeds, all should be white; though where a tinge of yellow or buff appears on the newly-hatched chicks, it is no sign whatever of impurity. None of the *black* breeds are entirely black when first hatched, and, as a general rule, do not become thoroughly black until the chick gets its second plumage. There is a decided difference in the fledging of the different breeds; while some feather very rapidly, others are slow. Those that are among the ones that feather quickly are Leghorns, Hamburgs, Games, Houdans, Sultans, Dominiques, P. Rocks, Bantams; while those that feather somewhat slower are Light Brahmas, Black Spanish, Partridge and White Cochin, Buff Cochin and Dark Brahma. Our experience has been that they feather about as enumerated. Of the slow ones, Light Brahmas first; while Dark Brahmas are last. Leghorns feather so rapidly that visitors to my yards often ask if they are not Bantams. They are *completely* feathered at four weeks, though with the Browns the plumage is not right until the second feathering. They crow when five and six weeks old. Eggs from any of the rapid-feathering ones can be set up to 15th July, and they will grow like weeds.

June Notes.

Eternal vigilance is not only the price of liberty, but a good motto for *June* for poultry-raisers. Many will have birds out by this time, and they must be attended to *regularly*. If you are trying to raise a good many chicks, the coops *must* be scattered around a good distance apart—the further the better. And if you trust Tom, Dick or Harry to feed or water them, very likely they will miss a coop or two; so *interested* ones had better attend to them. Fight the chicken-lice; use the whitewash freely; keep chicks shut up until the dew is somewhat gone, if you have your coops on grass; if they are in the garden, where a coop or two should be, you can let them have their daylight ramble; and if you are up early enough to watch them, and see them "gather in" the cut-worms and other garden pests, you can understand why there is a double interest in having them there. *Keep the hen in the coop, though.* If your old fowls seem to be constantly picking themselves, they need attention. See immediately that they have a good dust-bath to roll in. Get the dry dust from the roads, and put a handful of sulphur with it. Tie old rags underneath their roosts that are saturated with coal-oil. If any of the young chicks appear droopy, *look for lice* at night after last feed; grease their heads and under the wings. Remember nine-tenths the diseases that trouble poultry originate solely from lice

G. O. Brown.

Horticulture.

The Vineyard.

It is not a gratifying feeling to the heart of the philanthropist to consider that upon the miseries and misfortunes of others are we to depend for blessings which are thereby realized to ourselves; but so it is, and the inscrutable ways of Providence are past finding out. The phylloxera among the vines of France and other countries of the continent of Europe, will probably tend to the establishment, upon a permanent foundation, of the wine interest in this country. Not only are immense quantities of vines being exported from this country to supply the losses occasioned by the destructive insect, but even now we are exporting large amounts of our wines to Europe, which are being returned to this country as the products of their wine-growing districts.

In a communication in our May No. of a valued correspondent of Anne Arundel Co., Md., a suggestion was made as to the most feasible manner by which the wine-growers could realize their profits in the sale of their product, and these suggestions are seconded most earnestly by Mr. Geo. Husman, the well-known vineyardist, of Missouri, who is an acknowledged authority upon this subject. In a recent address to the Immigration Society of Missouri he remarked that "there are millions upon millions of acres in our State which can produce the wines. But we want other elements among us than we have had so far, and we must go to work in a different manner. I shall try and enumerate a few of our wants:

"We want men who are willing to work and wait a few years for the results of their labors; men who have sense, skill and industry enough to profit by the experience of those who have worked before them; who can adapt themselves to the different requirements of our soil and climate—in short, thinking, intelligent labor."

"We want colonization, combined efforts. Let ten, fifty or a hundred families grow the grapes, while they are made into wine in one establishment by men who are skillful in wine-making; who know what they are about, and who expect and make a good marketable wine with as much mathematical certainty of the result as if they already saw and tasted it; who trust nothing to guess-work, but all to science and knowledge. We want good cellar-managers, such as they have in the best establishments in Europe, who understand the cutting, mixing and blending of different kinds of grapes and wines, and who will give to the public a uniform, good and

drinkable wine, instead of the nauseous stuff which has so often disgraced the name of American wine, and which has prejudiced the public against its use."

In the remarks of the venerable Wilder it will be seen that an immense amount of our wine is being shipped to Europe; and Mr. Husman confirms the statement and names the varieties of the grape that are found to be phylloxera-proof. He says that "while Mr. Rammel has perhaps attained the first and most marked results with his Taylor seedlings, others have experimented with them also. I will mention here the Uhland of Mr. H. Weizdemeizer, at Herman, which makes a wine of very high character; the Noah of Mr. Wasserzeicher, of Nauvoo, Ill., which is already well known among grape-growers; but especially the seedlings grown by Mr. Nicolous Grein, of Herman, which make a wine equal to the choicest hocks, and which may safely be brought into competition with the best Johannisberg and Deidesheim Riessling."

This class is also phylloxera-proof; and as all of them grow very readily from cuttings, they are very easily propagated, and millions of cuttings have already been shipped to France, and even California, of the Taylor and Elvira—the only ones accessible in quantity—to serve as stocks to graft their Vinifera upon, as well as to test their wine-making qualities. They are all exceedingly hardy, withstanding the severest winters without injury, and very little, if any, subject to rot. We are therefore working upon a sure basis, and need not fear the reverses of the past, while we can produce from them a wine which can compete with the most renowned of Europe.

While, therefore, the prospects of Missouri grape-growers rest upon a surer basis than ever before, while we think that we see our way to a grand success, the prospects of France, Germany —in short, all the grape-growing districts of Europe—are darkening; and even California begins to feel the ravages of that insidious enemy, the phylloxera. All look to us for relief, in the shape of cuttings and plants of our phylloxera-proof varieties. There were not cuttings enough of Taylor and Elvira in the State last year to meet the demand from abroad, and the sale of them, of the trimmings of our vineyards, will form a considerable source of revenue to our vintners. The product of France, owing to the ravages of the phylloxera, has decreased to an alarming extent, while California wines are shipped over there in large quantities, to be transformed into French Medocs and other white wines, and then be shipped here to America to be sold to the credulous public as choice French wines. Can we not put a stop to such folly? Must we always buy what is "far-fetched and dear-bought" and let our own superior goods go begging at a lower price at home? American mechanics are already excelling European in cutlery, in machinery and in hundreds of other articles, and we can also excel them in our wines, if we only try. Invite the grape-growers of Europe to leave their devastated and uncertain vineyards, to bring their skill and industry here among us, and let us supply the demand which the failing vineyards of Europe are sure to create. We can do so."

Maryland Horticultural Society.

The May show was held on the 6th ultimo at the Academy of Music,—many fine and handsomely-grown plants being exhibited, fewer cut flowers than usually, and no fruits or vegetables. The attendance was large.

The following awards were made: Best 6 Dracœnas, $2, Jas. Pentland; best 6 Fuchsias, $2, best 12 Zonal Geraniums, $2, Alex. Scott; best 3 Petunias, $1, best 12 Verbenas, $1, best 6 double Geraniums, $2, R. Cromwell; best 12 Greenhouse Plants, $5, best pair Hanging Baskets, $1, E. Hoen; best single specimen Greenhouse Plant, in bloom, certificate, best 6 ornamental Foliage Plants, $3, best Table Design of cut flowers, $4, best basket of cut flowers, $3, best Hand Bouquet, $2, Robt. J. Halliday; best display of Gloxinias, $2, Wm. H. Perot; best 6 Rhododendrons, in bloom, $2, A. Brackenridge; best collection blooms, Hardy Flowering Shrubs, $2, best 12 Tulips, $1, A. Hoen.

The June show will be held on Thursday, 3d, from 11 A. M. to 10 P. M., at the same place.

Kerosene in the Orchard.

A writer in the *Rural New Yorker* says: Like wind and fire and water, kerosene is a very good servant but a very bad master. Its use has been urged for all sorts of ails and aches. For wounds and scalds, burns and frost bites, for rheumatism, neuralgia and cramps. Soon after the late war, some horticultural journal, flushed by a small trial, said it would kill every lichen and louse, and hurt neither bark nor leaf. Its advice to-day would not be quite as loud or loose. But I am a very sanguine man. I tried it on some young pear trees one spring; the leaves gave up their dead, and so they did their lives. The bark stood it better; only one tree was scalded, and that got well.

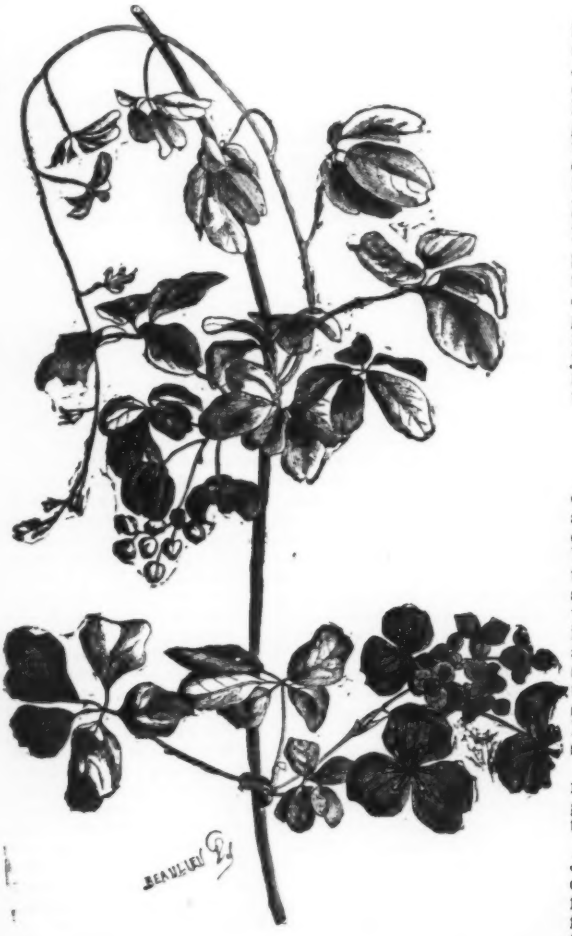
Since then I have only tried kerosene raw, twice. Each time to kill the woolly aphis or American blight. The first trial was on a large Early Harvest. Many of its joints and limb crotches were colonized by the pest. They had squatted and foraged and blasted all around; the bark was thick and scabbed. I deluged and soaked with kerosene the crevices and whole outposts of the tribe. It killed the scourge and did not hurt the trees. I tried it a year last fall on the same pest, which swarmed in downy tufts over the pruning wounds and bark bruises of two small apple trees of about an inch in diameter. These were closed in the fall, and so thoroughly that I feared the spring would reveal my rashness in a couple of ruined trees. But though the aphis departed from their borders, the trees were not sensibly hurt.

Now the writer whose note has called out this talk says: "Kerosene, or petroleum, put in the

fall about the roots of some trees, to keep off, I think, insect pests and 'varmint' killed the trees." It's very likely true. The root structure and bark are unlike and more tender than the bark of tree trunks and limbs. They differ in their duties. The root all through is made to drink in the food or harm to which it stretches. The upper bark is more like a robe, or shield and shelter. It stands frost, storm and drought, and saves the vital parts beneath. But this kind of cover the roots have not, and do not need. What, therefore, on the bark might only make a cleansing wash, below is drank up by the rootlets and kills. What above would not reach beyond the scarf skin, below would strike the inner fibres of the wood and poison the vital currents of the sap.

Something like this result of coal oil, or coal tar, about the roots of an apple orchard, was some years since seen in this country. The field mice, and I think rabbits, were destructive. A heavy coating of coal tar was put close down to the roots and some ways above. The "varmints" did not fancy the diet, nor did the trees. They were about all killed.

There is another thing which should be always held in mind by the orchardists. A tree will not stand tampering with its vital parts half as sturdily in the fall or winter as in the spring or growing season. You may scrape with a hoe and gash and tear the bark in spring, but the like in late fall or winter would prove fatal to the tree. At any rate, it would then resent such treatment as cruelty and hurt.



Akebia Quinata.

Our Engraving, for which we are indebted to Mr. L. B. Case's *Botanical Index*, represents this pretty Japanese vine, which has just gone out of bloom, in full flower. Its leaves are five-fingered, of a glossy green in summer, and bronzed in the late fall, being persistent in this climate and hanging on long after hard frosts. Its flowers, which are purplish, or wine-colored, are deliciously fragrant, resembling somewhat a flower seldom seen here, the Sweet Pea. The Akebia is one of the prettiest, hardiest and most vigorous climbers we have, of a very graceful habit; and being entirely free from any insect enemies or objectionable qualities, it is very desirable for festooning a porch or trellis.

Ampelopsis Veitchii.

This is another climber which deserves to be more widely known and cultivated. It is a Japan species of woodbine, resembling our Virginia Creeper, not very long introduced, perfectly hardy here and a robust grower, though not so vigorous as the native. It attaches itself firmly to walls and trellises and to rough wood; the leaves are small and color up beautifully in the autumn, changing to brilliant scarlet. It seems, like the English Ivy, to succeed best on the north side of a house or wall.

There is another variety, A. variegata, which has white, pink and green leaves, rare as yet in cultivation.

Still another fine climber is Hall's Japan Honeysuckle,—a vigorous evergreen sort, with pure white flowers, changing to yellow; very fragrant, and the flowers abounding from June to November.

Greenhouse and Flower-Garden—June.

There is no reason why the conservatory should be any less attractive or gorgeous at this season of the year than it was before the removal of the hard-wooded and other plants which do well out-of-doors during the summer. By means of the readily-secured tempered light and humid atmosphere the brilliant Fuchsia, with its countless and varied drooping blossoms; the stately Clereodendron, and the Gloxinia, with its diverse and inimitable tints, may be had in equal perfection with the variegated Caladiums and Begonias. The Tydeas, Gesnerias and Achimenes will aid in keeping up a continuous bloom. The introduction of a few Palms and Ferns will give variety and add to the attractions by their beauty of form. A few vines will not be amiss—such as Bignonias and Passifloras. Use the syringe frequently to keep under the red spider and thrips.

In the flower-garden use the hoe frequently to keep down the weeds and the surface friable and open. Pinch back such of the border plants as require it, and peg down those whose habit of growth admit of it. Chrysanthemums from cuttings may now be planted in the open ground, and should be pinched back frequently, and this makes stocky and handsome plants when they are moved into the conservatory in the fall.

Deutzias, Wigelias and Spiræas that have done blooming may with advantage be shortened back, so that they will make a growth of new wood for next season's flowering. Arbor Vitæ and Privet hedges may be trimmed towards the end of the month.

Vegetable Garden—June.

Tomatoes for canning should be planted from the middle to the end of the month. Another sowing of *gumbo* should be made, one or two plantings of string beans, and it would be well to plant some more winter beet. Keep up succession crops of sweet corn and bush squash. Early fall cabbage should be planted, but it is rather soon for the main winter crop. Harvesting the spring-sown crops will now occupy much time, and where haying is to be done the garden will go to seed for a time. At present writing we are having a fine opportunity to kill weeds, but the heat and drought threaten to stint some of the crops. Still, it is well to remember that, until every foot of ground between the plants has been stirred by hoe or cultivator, we are not quite prepared for rain. During these dry spells hills and drills should be prepared for coming crops; and some kinds of seeds, beets for example, I would not be afraid to sow, however dry. But it is not safe to soak such seeds, because they will germinate, and a continued drought would destroy them.

The potato-bugs came out early and in great force this season. I took a barrel and a half of plaster, spread it on the ground about four inches thick, and shook evenly over it five pounds of Paris green. Now, some people would turn and mix such a heap in five minutes; I spent nearly half an hour at it, and think it pays to do it. Such a well-mixed pile, if it kill at all, (and it does,) is no respecter of bugs or hills; and the abundance of plaster, besides being good for the plants, enables one to scatter it at a brisk pace, and without any fear that the material will run short before the field is covered. The quantity named is good for four or five acres.

The mice were destructive in my frames this spring, eating egg-plant and other seed. I dusted heavily with lime; and that having no effect I tried sulphur, and the vermin fled at once. One instance is not to be depended on, but is worth trying again, as sulphur is an article generally kept on hand in hot-houses.

There could scarcely be a fairer way to test onion-seed than to cover them with two inches of sand, as mentioned in my last. I sowed them so thickly that they nearly touched each other. They came up about three inches or more apart in the soft sand, whilst those sown in the garden were, of course, too feeble to break the crust. Too late now to resow.

When you are disposed to destroy a worn-out asparagus bed, try to kill it with an overdose of salt. A former neighbor of mine experimented in this way, and only succeeded in restoring it to its former fertility.

The cabbage-fly is not quite so bad here as it was last year, but requires much watching. The strawberries look better than usual; I believe that the sub-soil plow has helped them.

JOHN WATSON.

A Circular Garden.

An ingenious arrangement is that described in the *Practical Farmer*, by a writer who says it has long been used with great satisfaction.

In the first place, the farmer should lay out roomy grounds about the house to seed to grass and plant in trees. Then select a convenient place for a garden, making it circular in form, and containing half an acre, an acre or acre and a half, as desired. This should border on or be entirley surrounded by the lawn about the house. When it has been put into proper garden tilth, drive a stake in the centre and stretch a line 12, 15 or 20 feet long and make a circle on which to plant grape-vines with whch to form an arbor or central inclosure. Next stretch the line 30 to 40 feet and make another circle, and on this I prefer to plant American Arbor Vitæ, for a wind-break and border, and to indicate the bounds of my inner garden, used for pieplant, asparagus, all perennial plants, vines and shrubbery, and will necessarily have to be worked by hand entirely. Three or four rods outside of this I draw another circle for the outside boundary of the garden. Around this circle I plant an evergreen hedge, also, as it will serve as a wind-break and make the garden earlier and more productive, besides being very ornamental. This outer garden is for growing early corn, potatoes, cabbage, and all the varieties of vegetables required in the family.

In tilling this, I commence at the outside, turning the first furrow out, against the outer hedge, and continue to go round and round until done. It is one long furrow, no turning or stepping on ploughed ground, etc. Then

drag, mark out and plant, doing all the planting in these furrows, except cucumber and other vines, which should be planted in every other row. Cultivate with horse and proper implement until plants are too large to permit further work, and then hand-work may be done when needed. To do this horse-work properly it is necessary to leave an opening across the outer garden, extending to the central arbor or inclosure. This opening or entrance should be 6 or 8 feet wide. Then, the horse can shift over from one row to the other, as he crosses this entrance, every round. I adopted this plan about fifteen years ago, when I came on this farm. I found the garden then, like most farmers' gardens, cumbered with rows of currant bushes, cherry trees, plum trees, etc., their sprouts encroaching constantly upon planting grounds. I removed the small fruit to the border of the orchard, and, after properly manuring and working the ground, laid it out as above described.

The Apiary.

Best Mode of Increasing Swarms.

We copy below an extract from an address by L. C. Root, a well-known authority:

There are many beekeepers who disapprove of any mode of handling bees that checks or controls their natural tendencies. Consequently they favor only natural swarming. Now, I desire to say that unrestricted natural swarming is the most unprofitable system of increase that can be practiced. In fact, I know of no one thing which is practiced to any extent that is so thoroughly undesirable and so far behind the times. Even the box hive and brimstone pit do not prove their advocates so unwise as are those who allow this mode of swarming. Those using the box hive might control swarming to the extent that sufficient honey would be secured to warrant the application of the brimstone match.

A little over one year ago I suggested this motto:—"Keep each colony supplied with a laying queen at all times." Now, I desire to make a strong assertion, and I ask beekeepers to consider it. With a knowledge of what I state, I affirm that if this motto were observed, the amount of honey produced throughout the country at present would be more than doubled from the same number of stocks. When two or three swarms are allowed to issue the old stock is without a laying queen from fifteen to twenty days. This fact alone makes unrestricted natural swarming entirely undesirable.

Time and space will not allow me to mention the many disadvantages of the practice referred to; but I hope that my assertions, given as the result of thorough investigation and actual practice, will lead those who have not already done so to investigate the advantages to be gained by the more advanced methods of increase. Many maintain that one swarm should be allowed to issue, and all after swarms be prevented. In some localities and some seasons this may prove satisfactory; but, all things considered, I object to any natural swarming. There are several modes of artificial increase, which in most seasons will prove practicable: but I have found that it is necessary to adopt some system that will suit all seasons, for we cannot determine in advance what the season will be. I shall therefore recommend, as the best mode, that of forming nuclei and building them up to full stocks. In this way the queen may be reared from the best selected stock. Then one comb of brood may be taken at a time from original stocks, until each nucleus is built into a strong swarm. The place of the cards of brood removed from original stocks should be supplied with empty combs, or frames filled with foundations. The practical benefits to be gained by this method could not be enumerated in a single article. They can only be attained by a thorough study of the subject through the various publications in which practical bee culture is made plain.

The Grange.

Grange Achievements and Purposes.

The following address was delivered before the Montgomery County Grange at its quarterly meeting at Rockville, April 29th, by the W. Lecturer, Wm. Hy. Farquhar:

At the last meeting of the County Grange, in Gaithersburg, our former State Agent, now State Master, brother H. O. Devries, told us in his discourse that one of the principal objects of these quarterly meetings should be to attend to and promote the business interests of the Order.

We are well aware how much depends upon the success of this practical feature. One of the cardinal doctrines always urged by the advocates of our system, is its economy. The brother or sister who enters within our gates expects to find that there is something to be gained by coming in. We assure him and her that it will pay; and though we also promise payment in many other ways beside the coin, the pecuniary advantage is insisted upon as being sure and certain.

The most knowing ones of our Order still see that the claim of practical benefit is no idle boast, provided the proper means are used. They knew from the first that in such a new and peculiar organization as ours, a great deal of skillful management would be required. The success of all business affairs, even of those which proceed in an old routine channel, requires skill and management. The grange is no bonanza; and those who expect to find one had better go down a few miles—near the Potomac—than to look for it inside our gates.

But a fair degree of success from the proper use of the cardinal grange principle of coöperation has been reached, and the system only needs a natural development to produce all the favorable results which its friends have promised.

Now this is, according to brother Devries, what we meet here in the county grange to work out: to devise and explain the practical means of getting out of the State Agency and other combinations all that is in them. Have faith, and success must come!

In regard to this matter of faith, let us make an appeal. "Watchman, tell us of the night, what the signs of promise are!"

I do not intend to pass myself off as a diligent watchman during the days of the past; much less as a prophet of the future. Yet, now, about the middle of the seventh year since the commencement of my services in the capacity of lecturer, I look back with great satisfaction over the long interval, seeing many evidences of benefits received and great good accomplished by the exertions of my fellow-members of the grange; as well as remembering a succession of many evenings of high social enjoyment;—all these together aggregating an amount large enough to constitute an important part of one's life.

This being the case in reviewing the past, I see no reason to doubt of the future. It is certainly a great thing to be able to show a great past. Napoleon, standing on the rock of St. Helena, said to his companions in arms: "Let us exult in the glorious career we have run, though it be closed forever; and rejoice in the fame won by past achievements, if debarred from the possibility of further performance." Now, the history of the grange may be less brilliant in the World's Records than that of Napoleon, but it is far more creditable to Christian men. It is one of a combination, large, more numerous than was his largest army,—organized not for destruction, but for general benefit; and directed not to wicked, selfish, ambitious ends, but to the betterment of the better half of the nation to which we belong. Neither have we met our Waterloo,—to conclude a comparison whose only foundation is in its contrast.

The Order has met with no signal defeats. In some places it has declined; in others advanced. If any one can give a reason why our Order should not advance, we would like to hear from him. Reasons can be readily given—and have been amply spread over the land—why it should be sustained, be increased, and embrace all the more intelligent farmers of the country. I feel that it would be tedious and monotonous to repeat them. Why tell people that a combination of men are stronger than one—that coöperation can effect more than an individual can; and other self-evident truths? Farmers being really endowed, like other human beings, with reason, know all this just as well as they would after a thousand orators had dinned it into their ears.

But we must not be too hard on farmers, because we are farmers ourselves, and can discover where the trouble comes; where some of the causes lie; of the early break in the rapid rise of the Order, and the subsidence of the early enthusiasm which had distinguished it in its origin, with the slow progress it has made in latter times. One of the reasons why the current of the grange runs low now, is that it began with a flood, a perfect torrent. It is not in the nature of things that floods can keep up to high-water mark; nor is such a thing desirable. The stream must come down to a point at which it can be sustained by the natural flow. Many of the wisest members doubt if it has reached that point yet. What are eight or ten years in the life of any great institution? Scarcely enough to allow it to become consolidated, and enable it to find where its real strength lies. We ought to be satisfied with the actual condition, if we take all the facts into due consideration, and quit making comparisons of the present condition and prospects of the Order with its earlier state by mere counting of heads. Throwing off every feeling of disappointment because the first boom was not sustained,—these booms in the very nature of things fade and fall away,—let us move on steadily and hopefully; analyze with intelligent comprehension the capabilities of the Order; and, having found where our strength lies, use the means it offers to obtain the fruits. Brother Devries thinks that when we come together in these quarterly meetings our attention should be particularly directed to perfecting business arrangements. This is good advice, I have no doubt; that brother is the man to give it, and to illustrate his views by practical application. But he would not discourage, I know, any efforts we may make, in whatever direction that may tend to the betterment of agricultural people. I have thought these meetings had the happiest effect in bringing grangers together from all parts of the county; they stir up our zeal in the cause of the Order, as well as of progress in agriculture generally; and, better than all mere pecuniary gains, they bring us together in feeling, and help to break down the obstructions to progress raised by those whose aim is to profit by miserable party strife. A great cry was made of the mischiefs to be produced by the grange organization being sure to run into party. I suppose by this time people are convinced that charge at least unfounded. Nothing of the sort has occurred; but some disappointment there has been among the reflecting members of the Order, at the extreme degree of sensibility on that question, in preventing the advantage which might be attained, and only can be obtained, by united action of farmers to bring about local reforms. There could no danger to their real interests arise from a combination of men whose interests are wholly and entirely the same. But there is another sort of danger which shrewd men could easily perceive—danger to their own special interests and ambitious prospects. Nothing has ever shown more clearly the simplicity (we will politely term it "simplicity;" it might be called the "gullibility") of the farming community than the easy process by which their party feelings are made to take the alarm. *Party* may have something good about it—great men tell us so—though the greatest and best always seem to caution us against it; and I believe that, as a system for producing the effects of good government, it has proved a miserable failure. But, for good or for evil, it is bound to go on; and it is certainly the part of reason and common sense to keep party spirit within its proper bounds; so at least it may not obstruct progress and true reform more than it need.

Here the grange does come in to some small extent by promoting social and friendly feelings. It shows that persons of opposite politics can work together for the common benefit; that fertilizers may be bought and wool can be sold to advantage, and all such matters transacted jointly by men whose opinions differ on certain questions.

In making these remarks I would not on any account be understood to complain that our grange is wrong in its great care to exclude party politics entirely from entering within its gates. It is our boast and just pride to enter here as men and women engaged in one worthy and noble object, from which we are not to be led astray by any of those exciting questions,—that class of questions which concern feeling and passion much more than calm reason. May this be our continued course! In the meantime it is our duty and our right to raise the standard of agricultural importance and dignity by all proper means in our reach.

It is right that we should examine more closely into the real nature of the position we occupy, or ought to occupy, in the country. It is right to see whether we are fairly treated; and if not so, how the injustice is to be redressed. It is also right to observe with attentive perception what the tendency is, and whether new systems are being started which may seriously affect our interests.

A curious article appears in the May No. of the principal scientific journal published in our country,—*The Popular Science Monthly*,—in which a learned writer on political economy does us the honor of investigating the subject of land. The first conclusions arrived at by this writer are simply preposterous, and not worthy of consideration. He endeavors to show that the land tenure should be abrogated, as far as individuals are concerned, and that the general welfare will be greatly advanced by making it the common property of the nation. Of course this ingenious idea is not worth mentioning to you, except to laugh at; but there is a doctrine connected with it which the writer dwells on, and in which there may be something not altogether unworthy of attention. He tells us—and proves it, of course—that the proper proceeding to commence with, is to make the *land* pay all the *taxes*. They are to be collected from the land and nothing else.

This is the first time I have seen the idea expressed in plain language; but something like it has been foreshadowed, I believe. It will suit some of our fellow-citizens very nicely. Any approaches toward it will bear watching at least. In a State like ours, where half the wealth and nearly half the population, and perhaps more than half the power, are concentrated in one place,—the people not being interested directly in land,—it may be well for those whose *all* depends upon it to be awake to the tendency of these things.

This points to one of the great purposes of our Order. Its clear meaning and interest is to take care of the farmers' interests. Why, oh why is it! they do not come to see the broad fact staring all in the face? No secrecy about it, that for them, as for all other human beings, "in union is strength."

LIMESTONE VALLEY GRANGE, No. 70, Howard Co., held a public pic-nic May 27, for the benefit of the new hall it intends erecting. W. State Master Devries and Bro. J. S. Watkins made addresses.

Evenings at the Grange—No. 1.

Women Speaking.

"Stiff, stupid and stolid!" exclaimed brother Carson, with cumulative emphasis, as he stepped from the grange hall this evening and met me at the door. "What? not your meeting? How could that be?" "Oh, I don't know. We just sat round there and did nothing. Nobody had anything to say worth hearing; and, well—next time I am going to be among the missing. I don't care a continental if they do fine me."

"And did *you* say or do anything to improve matters?" "No—I am not an officer. It's the lecturer's place to get up something entertaining. And I think it would be a great deal more agreeable if the ladies would give us a little treat every now and then, and have more to say in the grange than they do. I'd go any distance to hear a pretty woman make a speech."

"But Southern women have never been in the habit of speaking in public. They are born and raised with a thorough aversion to all that renders them conspicuous, and—"

"Let me interrupt you, Ceres, one moment. To speak in the grange is not to speak in public. We are a brotherhood, and sit in our hall in all the sanctity of a family circle. At their tables and firesides sisters do not wait for brothers to do their talking! And, as to its making them conspicuous, that idea merely comes from the novelty of the thing. Of course they can fill no office in the grange without attracting attention. But after going through the duty a few times they do not mind it; indeed if they are fully engrossed in the service, as they ought to be, they soon forget all about eyes being on them. Just so it would be with their speaking,—a little trying at first, but after a while it would come as easy to them as speaking at home."

"I cannot fully agree with you, brother Carson. Any requirement as contrary to the life-long habits must, necessarily, be a painful effort to a retiring woman. But I will concede you this much: it does seem to me that there might be times and occasional occurrences when it might be a sister's duty to speak in the hall,—when, as a conscientious member of our brotherhood, she would compromise principle by giving the sanction of silence to something she does not approve."

"Yet, now, in this extreme case, she might write down what she thinks is imperative for her to say, or get some brother to speak for her."

"Pshaw! what (may I say it?) veritable nonsense! Pardon me, my good sister, but if you will only tell me what impropriety there is in a well-informed woman getting up under the impulse of some stirring interest and saying what she has got to say, in a good, sensible, lady-like fashion, I should like to hear you."

Women can sing out, dance out, dress out, and make themselves conspicuous in a thousand ways; and 'tis all right and proper. Why? Simply because it is *customary*. And moreover this is all done in public. Now, I don't want women to mount the rostrum, nor address the General Assembly, nor take to stump-speaking; not at all. I, too, have a distinct Southern aversion to woman exposing herself to the pub-

lic gaze when it is not necessary. But here, where she is shut out—or in, rather—from all the world, and within the *sacred circle of pledged protection from brothers*, where she is not on sufferance, you remember, but with the *full right* of membership, the endowed and unquestioned right of voice and vote on all occasions, where can be the objection to her exercising that right?"

(After a quiet laugh.) "Well, my objection, next to that of the performance being unbecoming to them, is that most generally they would be *unbecoming to the performance!* Not having had any practice to make perfect they would be bound, in nine cases out of ten, to say the wrong thing in the wrong place; and be sure to begin with an 'I think,' when they ought to be recommending their argument with somebody else's *think!*"

"And is it reasonable to expect them to excel without practice? Do our boys swim without going into the water? No, I think there need be no fear on that score. Women are apt scholars; and with the stimulus of good listeners to fire their ambition, it would not be long before they would distance the brothers in fluent, brilliant and appropriate addresses, if not in tough argument and drill debate,—much to the improvement of the grange and of the brothers too."

"I certainly think that our women should appreciate the high compliment put upon them by the grange, and endeavor honestly to show their gratitude by trying to make themselves in every way worthy of it."

"Not only so—they are already worthy of it—but they can and should show their appreciation by making themselves both useful and ornamental in the grange. Only think, my fair sister, the grange is the one place in the world where woman's power and position is recognized without grudge and without question. Are you aware of that?"

I was fully aware, but before I could respond he went on in eagerness: "Then it is the one place, it seems to me. I will not even except the church, that grand working-ground for all the ladies, where woman should make it her duty and her business to be important—*conspicuous*, if you please to call it so,—not from vanity, nor love of display, nor any of that disgusting nonesense, but simply because the grange is her place; and by St. George a glorious place it is for her! It does my very heart good and makes me feel proud of my countrywomen when I see the influence a first-class, high-toned, cultivated woman has in that grange,—Mrs. Benson, for instance! Do you suppose there is a man in that hall that does not feel elevated and made purer every time she rises upon the floor?"

"High ho! quite enthusiastic really! I am glad to see that at least the sisters have the power to fire your soul. I thought but just now you were out of conceit of the whole concern, and meant to quit the grange in disgust."

"Not at all. I am out of conceit of such stiff, stupid meetings as we are having, and the foolishness of supposing women going to be made to attend by the farce of fines! Ridiculous! For my part I just intend—"

"To improve matters? and not to criticise others while we are merely helping them *to do nothing?*"

"Well, now, what remedy would you suggest? I've given mine. You make an address to our grange here next week, and I'll promise you I'll not be among the missing."

"And will *you* give one the week after?"

"Yes, provided they are short, sharp and decisive."

"It certainly does become us as grangers to put our heads, and hands, and hearts to work, and see what we can do to make our grange (what every grange is bound to be if it has half a chance!) agreeable, and improving, and profitable. For my part I think—"

But my "think" had to suspend itself for a moment, as just here the grange came moving out in a body and broke up our confab. As I walked home I could not help thinking what an injurious, unnecessary and ill-judged thing it is, at any time, to have a grange meeting "stiff, stupid and stolid," as Carson had said; and how uncalled for and almost impossible such an anomaly as a dull meeting would be if we realize what a varied and valuable field of both pleasure and profit is opened up before us, every time, as a band of brothers, we enter a grange hall.

VIRGINIA CLARKE.

[*To be continued.*]

The State Master's Work.

The W. State Master, Hon. H. O. Devries, visited Wicomico county the second week in April and delivered three public and three private addresses at Salisbury, Quantico and Barron Creek Springs. The audiences at neither place were such as the sterling merits of his addresses deserved. Yet it was a source of great satisfaction to know that they commanded the universal approbation of all who heard them, whether within or without the "gates."

The immediate effect has been the revival of Quantico Grange, No. 107, which had been dormant for a year or more. It has met and been reorganized with the following officers, who were duly installed on May 8th by the Master of Pioneer Grange, No. 38: Master, B. W. Truit; Overseer, Peter Owens; Lecturer, Richard Venables; Assistant Steward, J. W. Cantwell; Steward, Thomas Robertson; Chaplain, Stephen Mills; Secretary, Robert G. Robertson; Gate-Keeper, George Mezick; Ceres, Mrs. Leah Robertson; Pomona, Mrs. W. Mills; Flora, Mrs. N. B. Wright; L. A. Steward, Mrs. Mary A. Mills.

A number of influential men in the vicinity have expressed a desire to become members. On the whole, the outlook for better times is flattering. The membership have become satisfied that coöperation in the grange is better than isolated, individual efforts outside.

May 10th, 1880. WICOMICO'S DEPUTY.

Montgomery County Grange, No. 7.

The regular quarterly meeting of Montgomery Co. Grange, No. 7, was held at Rockville, Thursday, April 29. Bro. Jos. T. Moore declined to serve as master, and Bro. Isaac Young was

elected in his place. Officers were installed and addresses made by Master Isaac Young and by Lecturer Wm. Hy. Farquhar. The committee on "Necessary Laws" made a report, urging Patrons to use the whole power of our organization to remove the evils we labor under, and especially in endeavors to remodel our judiciary system. The question was debated warmly and at length, but the adoption of a plan of action was deferred till next meeting. A good deal of time was consumed in discussing whether we should have a Patrons' Fair this summer, but it was decided that the exhibition of our county agricultural society is all that is necessary in this direction. It was thought a wise thing for each grange or neighborhood to have an exhibition of household and farm industries.—Several amendments to the by-laws were adopted and other routine business transacted.

Things in Montgomery, Md.

Our wheat in this section is all looking well, and promises a heavy yield. The grass is suffering for want of rain. All of us who practice pasturing some of the land intended for corn before plowing, are having a very serious time trying to plow, the land in many cases being so dry that it is impossible to do good work.

May 26, 1880. T. J. L.

BALTIMORE COUNTY GRANGE, No. 13, will hold its quarterly (and annual) meeting on Tuesday, June 8th, at 10.30 A. M., on the grounds of the Baltimore County Agricultural Society, at Timonium.

To Prevent Egg-Eating by Hens.

Under this heading, in the March No. of our *American Farmer*, (which, by the way, has gradually gotten to be the most valuable visitor any master or mistress of a farm can have to come about the premises every month,) somebody says when this bad habit is discovered among the hens, "give them two or three porcelain nest-eggs and make their nests in as dark a place as possible; if this does not break them use the *hatchet*."

This supposes that the practice of egg-eating occurs among the *laying* hens, whereas experience proves that it is the *setting* hen that consoles herself in her long and solitary watch by a taste of her own fruit; whether this is for refreshment's sake or to get bad eggs out of her nest is not positively known. I have seen a turkey hen take an egg from the nest and run off with it hanging from her beak; but on examination it proved to be a bad egg!

In any case where the hen shows a disposition to this indulgence of egg-eating, before trying so sharp a remedy as the hatchet on her neck, try the less cutting one *of a knife on the bill.*—By simply trimming off the overlapping edge of the beak, the fault may be cured in nine cases out of ten. W.

IN giving directions for carpet-sewing last month I made a mistake in saying the breadths should hang from both sides of the board; they should be tacked together upon the same side. C.

Home Department.

Comes the Glad Spring.

L'ALLEGRO.

Up from the tomb beneath,
Instinct with blood and breath,
Like a soul raised from death,
Comes the glad spring.
Dancing along the hills,
Singing through woods and dells,
Laughing from rocks and rills,
To wake everything.

Lo! where the winter dies,
What things of life arise!
Sweet things from up the skies,
Angels let fall.
Can their's be sweet as *These?*
Such light and grass and trees!
While the 'rapt spirit sees
God through it all.

There, where the curtain lifts,
Far up those skyey rifts,
See! the enchanter shifts
Yet fairer scene.
Under this outer cloak,
Earth's mighty heart hath woke,
Like Dryad in the Oak,
Life, life within!

Sweet Earth, can we behold
Such magic web unrolled,
Such might of love unfold,
And dare to tread
With naughty steps herein,
Leaving our stains of sin
Here—washed so fair and clean?
Dear God forbid!

Virginia. TARPLEY STARR.

Country Homes.

The privilege of returning to a country home, after a protracted sojourn amid the varied and exciting scenes of city life, is something for which to be profoundly thankful at all times, and most emphatically so at this delightful season, when everything animate and inanimate is so full of beauty and gladness.

Can there be aught within or without those brown-stone walls, which are the pride of our city neighbors, that will compare with this life of ours, where—

> "All nature wears a look of love;
> And all the tumult of a guilty world,
> Toss'd by ungenerous passions, sinks away?"

while the dews of night and the sunlight of each new day calls into life things of use and beauty, which the long cold winter has hidden from our sight, but restores with seeming reluctance,—giving only a portion of them at once; finally, however, like death, to claim it all again. But we have learned to trust winter, with all its forbidding features. We know it gathers many good things to rest and holds them in kindly keeping till the genial influence of spring-time resurrects them, the same yet not the same, to gladden and sustain us.

Life seems infinitely better worth living, among the apple trees, with its privileged freedom from the conventionalities and the manifold constraints of city life; and those of the sisterhood who are wont to look grudgingly upon the apparent ease and luxury of city life, would, in all probability, if allowed a taste of it,

return with a zest to our more primitive ways and surroundings.

I must confess that "modern conveniences" are alluring to the busy housewife, and one usually returns to the country with ideas and hopes, having in view some approximation to them in the future; but calm reflection convinces me that with all those helps our friends in the city are no more free from wearying and wearing duties than ourselves. Common sense tells us the work is easier, even supposing they were to perform it themselves, and the claims of society are not the cause with any considerable portion of the "dwellers in Sodom," because, even among the wealthy, comparatively few are "society people" to any *wearing* extent. As summer approaches they almost universally look to some change as absolutely essential to health, and I can conceive of no other reason for it than the atmosphere of their homes, the depleting condition of which is no doubt, in a measure, due to "modern conveniences,"—not only from the direct effects of sewer pipes and gas escapes and uniform temperature, but indirectly to the indolence it fosters. It is not alone the mistress and her daughters who suffer from this, but the housemaids also. In most houses where two or three women are employed there is not, considering the conveniences, sufficient work to employ one honestly; but they are degenerating morally and physically, and a child of twelve in the country is capable of doing more work than most women now in city service.

A reasonable amount of conveniences is quite important, but not to the extent that leaves no need for going in and out of doors occasionally. There is more danger from hovering all day over a tub of hot suds in a warm kitchen than, with proper precaution, to be going out into the fresh bracing air occasionally; and the consequent opening of doors is beneficial to every member of the household. When we reflect upon this boxing of families within their four walls, and then packing rows upon rows together, with all the steaming and stewing of furnaces and ranges, is it to be wondered that they rush out for breathing space when summer offers green fields and seaside so temptingly? Evidently men of means are each year more disposed to seek the pleasures to be found only in country homes. In the vicinity of all our large cities beautiful houses, with fitting surroundings, are multiplying so rapidly that a bird's eye view of them gives one the impression of a continuous city sheltered by extensive forests. From a high point in New Jersey, not more than twenty miles from New York city, I recently had pointed out to me twenty settlements, largely peopled by the families of men transacting business in New York, and themselves going to and fro.

My attention was directed to one farm, so perfect in its appearance as to catch the attention of the most casual observer, as being evidence of the folly of some gentleman of abundant means, inasmuch as he had undertaken to demonstrate what degree of excellence in farming could be attained by unlimited expenditure, regardless of returns; art and science to be employed in every available manner. I failed to see the folly, although it was said to lie in the tremendous outlay of money. He was admitted to be a gentleman, and was supposed to be gratifying gentlemanly and refined taste in the experiment, as well as elevating the standard of farming, and yet was pronounced a fool for his pains.

Had he piled his dollars in granite or brownstone, and traversed foreign countries to fill it with works of beauty and art, who would have questioned his common sense or taste. Yet could anything within the circumscribed limits of a town or seaside home afford such perfection of beauty in art or otherwise as is possible with a combination of art and nature upon a reasonably well-located farm, where every hill and hillside, every field of grass or grain, together with the accidentals of streamlets and still life, form a picture, to produce a perfect copy of which would immortalize the artist?

Added to the gratification to the senses such surroundings afford is the life one may live among them. Either sage or gourmand might there find their highest pleasure. Yet most people fail to recognize its superiority over the city palaces. May the time be at hand when, like our English cousins, moneyed men will look upon their city houses as of secondary importance,—merely places for temporary sojourn,—the real home being "among the apple trees" and oaks.

The blessed country offers its superior advantages alike to rich and poor. There is no cot so humble that is not a vast improvement upon the quarters occupied by the same class within the city limits. And this is true of every intermediate station in life. Whether I had mites or millions to spend, I would engage to procure the most satisfactory returns from the country.

CERES.

Health Hints.

The covering of a child's bed should be thin, that the persp ration may escape through it. In winter blankets are best,—as perspiration, which at night is profuse, readily escapes through them. The whole house should be thoroughly ventilated every day, summer and winter; yet how many houses there are in which from one week's end to another the windows are not opened. In the country this is often the case. The best "spare room" and the "parlor" too often have the air of a vault or damp cellar. Many death colds, and severe illnesses, leaving life-long effects, have their origin in this way. In the city families are often afraid of the dust, and to keep furniture clean window-sashes are rigidly closed until the air is foul and musty. Wherever you live do not be afraid to let the air freely surge through your dwelling. In the army it was found that the sick and wounded who were left for months, even in cold bitter weather, in tents on the field, when houses could not be had, fared far better than those in large general hospital buildings. The reason was, tents were sure to be ventilated in some measure; the canvas, however tightly drawn, had a little opening at the ground, and had to be unfastened when a nurse, doctor or visitor came in or out. A sleeping-room should be ventilated most thor-

oughly by upper and lower sashes the moment you leave it or are out of bed. Of course I mean this to be in addition to having the sash open all night. I take it for granted that no intelligent thoughtful man or woman, acquainted with the laws of health, will sleep with closed windows, though I well know many who are well informed on other subjects give this little thought. It is not generally known that a cup of good coffee is a great safeguard against malaria or the evil effects of malaria. Good coffee, well made, is also a safeguard against forming habits of intemperance. Every woman should pride herself on knowing how to get a cup of excellent coffee or tea. Stuart and Peterson, of Philadelphia, make a small family roaster, which is not only economical in saving time and fuel, (being available on stove or range,) but also allows no aroma to escape—thus preserving the strength and flavor, which were lost in a great degree in the old method. Then the coffee should be absolutely pure; no mixtures unless you wish dyspepsia and a train of other ills. J. B. MOORE BRISTOR.

Potato Salad.

Take an ordinary-sized soup plate, filled lightly with all it will hold of the tenderest portions of lettuce that has previously lain for a couple of hours in the coldest water to be had, pick it into bits of an inch or two with the fingers, handling it gingerly. Upon a breakfast-plate slice or rather *slicer* in bits of potatoes boiled in their skins, and also cold, until the plate is filled full. Then likewise fill an ice-cream saucer with the nicest onion, thinly sliced and slightly chopped with the knife. Cut four cold hard-boiled eggs into bits, but do not mash. French sorrel and tender dandelion are also good additions, but not essential. Having everything thus prepared, begin mixing by scattering in your salad-bowl, first, lettuce and then a layer or sprinkling of the other ingredients, also of salt,—ending each round of them with a portion of the Mayonnaise dressing; repeat this until all are used up; then add about half a teacup of good vinegar, and with your salad-fork mix lightly and serve as soon as possible after making. Much of the virtue lies in keeping *everything* cold, even the oil and eggs of which the dressing is made, and use salt liberally.

Mayonnaise Dressing.

Take the yolks of three eggs; begin beating with a Dover egg-beater or silver fork, and very soon commence adding of the best salad-oil a few drops at a time. After a few moments beating add a little more oil, until about one-fourth of a large bottle has been used. Gradually toward the last use salt and cayenne pepper, according to judgment, and a few tablespoons of vinegar. If the dressing is of the right consistency, which depends greatly upon skillful manipulation, it will admit of being piled in the middle of a plate without running. I was taught to use the fork for the purpose, rubbing with the back of it in a deep plate, and to make it thus with care at the table, in the presence of your guests, is very appetizing; but when time is a consideration, it may be prepared as well in the pantry before going to table, and in much less time, by using the Dover egg-beater and a bowl. If properly made this salad is worth all the time and trouble it may require either way. CERES.

Cooking Hints.

Miss Leslie recommends that loaves of bread just baked should be wrapped in clean coarse towels or cloths slightly damped by being sprinkled with water. Each loaf should then stand on its edge. This is done to prevent the crust from becoming too hard. An old colored cook taught me to rub a little butter lightly over the top of each loaf before putting them in the oven. This makes the crust brown nicely, and also keeps it soft. The bread-box should be of tin, and the loaves in it wrapped up. In the winter dough may be kept sweet many days in a place where it will be cold, without freezing, and it will grow better to the last. It should be raised light, then kneaded a little, then covered with a damp cloth, so that a dry crust will not form on the top. Fresh bread can thus be had for the table daily, without extra work. Doughnuts, bread-cakes or rusk can be made of it by adding butter, sugar and spice; tea-biscuit, also fried biscuit, crust for apple dumplings and for pan pie.

Soyer, the great cook, recommends that when chickens are to be killed in the morning and eaten for dinner, a teaspoonful of vinegar should be given to each before being killed, to make them tender when eaten. This can be done with all kinds of poultry.

Stokes says broken china may be cemented by this preparation: Beat the whites of eggs well to a froth, let them settle, add grated or sliced cheese and quicklime; beat them well together and apply a little to the broken edges. This cement will endure both fire and water.

Corn meal is apt to heat, mould or grow musty if kept long in bulk or in a warm place. If sweet and dry, corn cakes, pone and corn muffins or gems of delicious quality may be made quickly by the use of Sea Foam baking-powder.

The French are the most economical of people in regard to fuel; the Americans, probably, the most wasteful. After breakfast the fire should be cleared of ashes, if there are any, and fresh fuel put on to fill the grate moderately. Let the oven damper be turned up, so as to heat it, and leave the small top door open, more or less, according to the intensity of heat required. In this way air enters over the top of the fire, and maintains a far better combustion, and consequently greater heat than when the draft-dampers are thrown down. Solon Robinson says "the cinders or half-burnt coals are better and worth more than coal. Save them, soak them, try them. Water renovates the coke, and wet cinders on a hot coal fire makes it hotter and will keep it so longer than a hot coal fire. Saving cinders is not meanness, it is economy."

J. B. M. B.

THE point of a teaspoon is a great assistance in removing hulls from strawberries.

A Wholesome Harvest Drink.

As alcoholic drinks have happily long been driven from the harvest fields, there have been various drinks besides water substituted, but scarcely any of them meeting fully the conditions sought for in the way of a wholesome, satisfying beverage. Water, even in all its purity, does not seem to quench the thirst and stimulate the body, as it produces additional perspiration and passes through the pores almost like passing through a colander, leaving the system exhausted and weak; besides, a drink of cold water, when suffering under a great degree of heat, is dangerous,—even at times producing sudden death. Latterly in England and elsewhere a drink is prepared by mixing oat-meal with water, in the proportion of three or four ounces to a gallon of water. This is found not only to satisfy the thirst better than water, or molasses and water, even when tempered with vinegar or other acid, but to produce additional strength of body. Oat-meal possesses a peculiar aroma and acts as a stimulant to the surface of the skin as to cause the complete digestion of the liquid. Men employed in an atmosphere of the intensest heat are much comforted with it, and become very fond of it. Hence it is in a measure "victuals and drink," possessing only virtues and without any drawbacks whatever.

Just now the time is here to give it a trial; and we shall be glad if at the end of the season those substituting the oat-meal and water will make report as to the results.—*Ger. Telegraph.*

Work for the Month—June.

Now all on the farm is life and activity, and that farmer is laggard who is not wide awake in mind and body, pressing forward to the work to be done.

Corn.—Where replanting is needed, do it as quickly as possible. Push the cultivation ahead rapidly, and let the successive workings follow each other as quickly as may be. When the first one has been deep and thorough, the after ones need only be superficial stirrings of the surface, which will thereby kill the grass and keep the ground below moist. Do not delay thinning longer than can be avoided.

Millet and Hungarian.—The hay crop promises in most quarters to be so much diminished by the drought, that it will he a matter of necessity to most farmers to supplement it by crops such as these plants offer, either for cutting green or for curing. They may be sown on now till the end of July. From three pecks to one bushel of seed to the acre is required, and they should be harrowed in, and, if convenient, rolled. The German or Golden Millet matures in the average season in about sixty days; the Hungarian requires a little longer period of growth. They may both be cut green for feeding to stock. When intended to be saved for hay, cut before the seed matures; otherwise the straw will be hard and woody.

Fodder Corn.—Succession crops of this may be put in up to the first of August. The attention being given to its preservation by ensilage, will probably lead to many trials being made on a moderate scale. The best plan, according to the most experienced cultivators, is to sow in drills, two and a half feet apart, and run the cultivator through several times during its growth. What is not used green may be cured for winter.

Tobacco.—Work for the planter for this month is of a routine character and must be fully understood by every novice in tobacco culture. Plant your tobacco as fast as you can and keep down the grass. It is not too early even now for the planters to begin at least to prepare their minds upon the curing of tobacco. The old fashion of curing upon scaffolds in the open air ought to be now a thing of the past. Small barns, 18 by 24 ft., 12 ft. pitch, is now the improved method, with furnaces for curing red or yellow tobacco. With furnaces the planter has entire control of his tobacco; without them he is subject to the capriciousness of the weather; and then the chances against him are not less than ten to one.

Potatoes.—It is preferable not to put in the main crop until towards the middle of the month, previous to which no pains should be spared to have the ground thoroughly prepared by deep plowing and perfect harrowing. Plant the seed while the ground is moist, taking care not to expose the sets to the sun and air. If after they are cut they are dusted over with plaster, it will be an advantage. Fertilizers, such as have no tendency to produce rot and malformed roots like imperfectly rotted composts and rough manure, ought to be avoided, and mineral fertilizers used instead.

Hay Harvest.—The warm weather has had the effect of forwarding the ripening of clover and the grasses. The cutting of clover ought not to be delayed till the lower leaves fall and the stems become woody. This makes an innutritious hay and a great deal of dust. Cure as rapidly as possible without much exposure to the sun. It is only necessary to let it lie a short time in the swath, and then a day or two in the cocks, when they may be opened to the air, and, in a few hours, transferred to the barn. Orchard grass should be cut early, as soon as it comes fairly into blossom, and it is quickly cured.

Root Crops.—Ruta Bagas are excellent keepers, much relished by cattle and sheep, nutritious and health-preserving. No farmer who knows his own interest but will provide a supply of these or some other roots to vary the dry rations usually given in winter. In this part of the country the crop is sown from the 20th of this to the middle of next month,—early sowing giving the chance to resow if the fly attacks the plants. A soil of not too compact a texture is best suited to these roots, and if not of a naturally good character it ought to be artificially fertilized. Fine ground bones or superphosphates are excellent applications.

The ground should be deeply plowed and finely harrowed. Sow the seed in drills thirty inches wide, and thin the plants to stand ten to twelve inches apart. Run the cultivator through the rows as soon as the plants come up, and repeat the working as frequently as may be. If the fly appears dust the plants with plaster, air-slaked lime, or sifted ashes.

Mangels and Carrots may still be put in early in the month; but a prerequisite to success is complete preparation of soil.

Wheat Harvest.—Do not delay all necessary preparations in the way of machinery, help, provisions, &c. Begin promptly when the first grain is ready, and push the work vigorously through, so that there may be no more risks of damage by storms or delays than possible.

Live Stock.—At this hurried season of the year we are very apt to allow all kinds of live stock to take care of themselves as best they can. For cows that are not yet fresh, but expected to be soon, June is by far the most dangerous month of the year,—grass is generally so good and the cows apt to be in fine condition, which all goes to make them fit subjects for milk-fever. We will not attempt to give any minute directions for curing milk-fever, but give a few suggestions that may benefit some of our many readers who keep cows. In the first place, it is only good cows (such as give a large quantity of milk) that are apt to have fever at the time of calving. All cows, especially good ones, should be watched very carefully for a week or two before they are expected to come in. The shortest grass will be the best for such cows, as that will keep down the flow of milk. Feed some *hard corn on the ear* every day for at least *ten days* before they are expected to come in. Give no other kind of grain.

The corn is found to have a good effect, as it is a rare thing for a cow to have any trouble with retention of the afterbirth if so treated. The young calf requires but little milk; so the smaller the quantity she gives the better for a few days. If the udder fills up very full, and is likely to become inflamed, it is better to have her milked by a careful person at least once each day. Use a little soft grease after milking: carefully rubbed in, it will also help to keep down inflammation of the udder. If you have no short pasture, keep the cow in a cool stable every day, without food, but plenty of water,—allowing her to go in the pasture only at night. This is the only period in a cow's life that we do not recommend liberal feeding. Calves that are to be raised, no matter for what purpose they are intended,—that is, for cows or for beef,—should not be allowed to stop growing. How common it is to hear it said that a calf is worth less at one year than it was at six weeks; the only reason for this is that it has been starved so much that it has failed to make any growth. The first year is by far the most important in the life of the future cow or steer. There is no better food for a young calf than its mother's milk. If that is wanted for use, give sweet skimmed milk and add a small ration of bran and linseed meal, gradually increasing the quantity each day. When the calf is two months old, the milk can, with safety, be discontinued if it is needed for younger ones; but will greatly help the calf, if it is to be spared, to continue the milk till three or four months old. In any case when the calf is to be weaned, keep it in a cool and dark stable, if in summer, for at least a week; feed it all the grass and hay that it will eat; give some bran and meal mixed, and plenty of fresh water every day. By the end of the week it will have ceased to fret for its dam, and be ready to graze when turned out. Put it in good grass and continue the bran and meal, and by the time you have to put up for winter your calf will have a start, so that it can be kept growing during the winter. By this course of treatment your yearlings will be worth much more than a calf.

This is perhaps a good time to repeat what has so often been said in the *Farmer* about the great importance of having none but the best thoroughbred males for use. If we expect to have young stock of any kind that will be any improvement on what we now have, decide what suits you best. If you wish Alderneys or Jerseys for the butter dairy, be satisfied with nothing short of the purest and best thoroughbred bull that can be found. Such can be had for a comparatively small sum at this time, and will add many times its first cost to the value of the herd in a very short time, if the calves are raised. If milk and butter for family use and some first-class steers for oxen or beef are wanted, then we would say get a thoroughbred Short-horn bull. His calves from common grade cows will be much larger and more valuable either to sell as veal to the butcher or to raise for cows or beef, than such as we often see that are sired by some cheap scrub bull that should have been made into veal at six weeks old. The grade Short-horn, if a failure as a cow, will be valuable as a beef, so we will have two chances of getting paid for the raising.

Orchard and Fruit-Garden.

This month affords the best opportunity for ridding apple, pear and other fruit trees of the suckers that are thrown up from the collar of the tree, as well as those commonly known as water-sprouts along the main limbs. For the former, remove the earth from about the trees to such a depth as will expose the starting-point of the suckers, when they can be cut off closely and smoothly and the earth replaced. If carefully executed now the tendency to such growth will be greatly decreased for the future; and besides the benefit accruing to the fruit-producing limbs of the trees thus treated, the difference in the appearance of the orchard is more than sufficient to compensate for the labor. The water-sprouts that crowd themselves in and make the tops of trees a tangled mass, if nicely removed now, will be less liable to appear again than if cut out in winter or early spring.

Caterpillar tents should not be suffered to escape, as they do a vast amount of injury to trees if left to defoliate them at this season of the year; then, too, every tent destroyed this year lessens the crop of those pests for the next.

The *Codling Moth* is now industriously engaged in its destruction of the apple crop. Bands of straw tied around the trunks of the trees, or bunches of old rags of any kind placed in the forks of the tree, and examined once every week or ten days, will be found to have concealed under them greater or less numbers of the *larvæ*, which can be destroyed, and the bands or rags replaced again for the next catch. Labor thus bestowed is well and amply rewarded by

the decrease in the premature dropping of fruit. The correctness of the old maxim, "No pains, no gains," is becoming unmistakably apparent in fruit-growing, and as much so in apple culture as any other branch of the business. If we desire good apples of any season, the trees we expect to produce them must have good attention; and by this term we do not only mean good culture and proper enriching of the soil, but judicious pruning and keeping free from insect enemies as well. And with the winter apples for the latitudes in which our journal has its largest circulation, the selection of proper varieties is a point which demands *and must have* intelligent consideration, if we expect to succeed. It will not do to accept as *fact* all that the travelling agent has to say on this subject, for his returns depend more upon the *quantity* than the *quality* of the goods he is selling, as the following dialogue which we overheard while taking lunch at an eating-house in this city, during the early part of May, will illustrate:

The vender of nursery stock was seated close by us, when he was approached by an acquaintance and addressed as follows:

"Jack, I have a friend in Virginia who writes me to send him a couple hundred strawberry plants for family use. What would I better buy?"

Agent.—"Lady-finger is a fine berry, and so is the Stewart."

Purchaser.—"But I think he wants some fancy berry."

Agent.—"Well, Monarch is a fancy berry, and so is Sharpless; but if I were in your place I would send him half a dozen kinds and let him plant them in the same bed; then in a year or so he would have a strawberry bed hard to beat for family use, as when they are planted in that way they mix up like corn and are all the better by it."

Purchaser.—"What, mix like corn! I never knew that before."

Agent.—"It is a fact, they will do it; and that is the best way to have 'em for family use." (Exit both.)

Now the above is no imaginary picture, but the exact substance of the conversation as we heard it; and if that agent happens to read this article, we would say for his especial benefit: post up a little better before you leave town. The moral of the above is conspicuous enough for all our readers to see it; so we will proceed to the fruit-garden.

As soon as strawberry beds are done fruiting, work the ground around the plants thoroughly and keep the weeds down by frequent stirring of the soil. If young plants are desired, let the runners go; if not, cut off when stirring the soil. Grape vines must be kept tied to the stakes or trellis, to prevent damage to the vines and crop by the winds. Intelligent observation will disclose plenty of useful labor in both orchard and garden to those who have success as their watchword.

NOTWITHSTANDING the alarm caused by late frosts, it seems probable in most sections, there will be an average crop of peaches. Small fruits promise fairly, except strawberries, which have been dwarfed by the drought.

Harvesting Clover.

The Deer Creek Farmers' Club

Held its monthly meeting at the residence of Mr. Geo. R. Glasgow, on Saturday afternoon, May 22.

Messrs. Moores, S. B. Silver and Judge Watters, the committee of inspection, reported that they found Mr. Glasgow's farm and premises in good order. The stock looked well; 31 head of beef-cattle on grass were almost fat. He has five good cows and a number of remarkably fine calves. His cattle are all high-grade Devons and Short-horns, and equal to any thoroughbreds. Mr. Glasgow has 35 acres in wheat, better than the average. He also has the best field of corn the committee had seen. He has 84 sheep, 65 or 70 lambs, and has already sold 25 lambs. His hogs—Berkshire, Essex and Yorkshire—are very good.

The subject for discussion was Harvesting Clover, and, as usual, we are indebted to the *Ægis* for our report.

George R. Glasgow regarded clover-hay, when well cured, as an excellent feed for horses, cattle and even hogs. More clover-hay is spoiled from too much than too little curing. When cured too much the heads and leaves—the most valuable portions—break off and are wasted. It should be cut when one-half the heads are ripe. If cut late in the afternoon and well stirred up the next morning, it can be hauled in the afternoon. He sprinkles about one quart of salt to a ton when putting it in the mow. Salt is said to prevent it from firing. Mr. Glasgow did not know this to be a fact, but he has never had any clover-hay to spoil.

S. M. Bayless had never cut any before last season. He feared he had cut it too green, and sprinkled salt over it as it was put away and never had nicer hay to feed. It broke up very little.

Wm. Munnikhuysen said clover-hay when well cured is the best hay a farmer can raise for any kind of stock. It is no more liable than any other hay to give horses heaves. Last year he cut it when two-thirds of the blossoms had turned brown. The first he cut was saved without any rain on it. It was placed in a mow over the stable. In a few days it became so hot that he was afraid it would set the building on fire, and he therefore took it out and stacked it, using a little salt. He never saw better hay. The remainder of the field was allowed to dry more and it broke up more than the other. He cut it one morning, after the dew was off, allowed it to remain until the second morning, when it was raked up, after the dew was gone, and the third morning hauled it in. A great deal of clover-hay is spoiled by too much curing.

Thomas Lochary thought the time of cutting depended upon the quality of the crop. When light it will thicken up by allowing it to stand. When heavy and cut early you can take off a second crop. Besides, heavy clover, if allowed to stand too long, will smother out the young clover. It should be raked up before becoming too dry. This also depends upon the season. In a dry season there is not so much sap in it, and it can be raked up sooner than when cut in a rainy season.

R. Harris Archer agreed with Messrs. Glasgow and Lochary in regard to cutting clover. When the ground is dry it can be raked up much sooner than when it is wet. The hay should be kept in a mow as nearly air-tight as possible. You will notice that the damaged hay is generally found at such places in the mow where the air has access to it. It is a good plan to put in layers of dry straw where the clover is green. The straw will not injure the hay. It will absorb some of the flavor and sweetness of the clover, and stock will eat it readily. If you use the straw it can be hauled in much greener than where the straw is not used. It is not the natural moisture of the clover that causes it to spoil, but if you get rain on it you never know when it is dry enough to haul in.

Judge Watters said that very few farmers differed as to the theory of curing clover-hay. It should be cut before getting too ripe, and the time, as had been said, depends upon the quality of the clover. Then it should be cured and got to the barn without being too much sun-dried or wet with rain. If well cured it is the best feed we have for horses, hogs or cattle. Judge Watters described an implement noticed in an agricultural journal which he thought would be admirably adapted for curing clover. The teeth were like those of an old-fashioned revolving rake, and wide enough to cover a windrow. In the middle were upright standards, 3 feet high, with a bar on top. At each end was a wing or gate on hinges, and as long as the teeth. By fastening a horse to each gate the hay could be rapidly gathered into small stacks. To empty it the horses are reversed and the gates swing around, leaving the hay behind. It should be raked, when thoroughly wilted, into windrows; then gathered into small stacks, say a load in a stack. Canvas covers could be provided for these stacks, which could be thrown over them. Thus protected the hay could remain in the field for a week. It will heat a little, but opening and handling it will be all the turning it needs. The canvas covers also would prevent its being sun-dried. It is much more dangerous to handle hay wet with dew than with the natural moisture in it. We are more apt to make a mistake by allowing it to stand too long than by cutting too soon.

Thomas A. Hays also thought clover-hay the best provender we have for all kinds of stock. It should never be raked or hauled in when the dew is on it. Mr. Archer's plan of putting layers of straw with it is an excellent one. His machine, the Eureka, cuts it and leaves it in a half-standing position so that the air can get through it. It should be cured by the air and not sun-dried. Hay tedders are sometimes an advantage by turning it quickly, especially where you have clover and timothy mixed. With pure clover they beat it too much. Would cut when one-half the heads were brown.

S. B. Silver said he was guided in cutting clover by the same rule as the majority of the members. It should be cocked up to exclude it from the sun, while the air can get through it. He had always put it away too green, as he thought, but it came out bright and nice. Salt is a good thing to use with it, and straw is also of advantage. Will put his clover-hay in cocks this year to get it air-cured, if he can.

Messrs. B. Silver, Hays, Archer, Rogers and Jas. Lee remarked that it would not pay to cock clover-hay.

Johns H. Janney said he always cut young grass, the first year, mixed timothy and clover. Cuts in the morning, uses a hay tedder and hauls in the afternoon. It generally comes out all right. He thought mixed hay better than pure clover, not only for horses but also for cattle. Sheep will probably do better on pure clover. Mr. S. B. Silver thought mixed hay the best for sheep.

W. D. Lee cuts clover when one-half the heads are brown. He prefers putting up too dry rather than too green. When burnt in the mow it is poor feed. Clover should be well cured before taking it in. Mr. Lee objected to Judge Watters' plan of putting it in stacks on account of the labor of taking the stacks down after allowing them to stand.

Geo. J. Finney said he had raised clover and timothy mixed. Never cut to suit the clover, but waited to suit the timothy. He regarded mixed hay as better than clover alone. When the weather was favorable and the ground dry he has frequently cut in the morning and taken in in the afternoon. Never had any hay mow-burned. Has quit mowing, however, and uses oat straw for hay.

William Webster—The greatest mistake farmers make is putting off the cutting of clover too long. Never cut when the dew is on it. Handle it as soon as it begins to wilt. If cut in the morning of a clear day it may be hauled in in the afternoon. Last year he cut in the morning, horse-raked it and hauled in the afternoon, putting straw with it and some salt. Had good hay. Would rather have it housed than exposed to rain or sun. A man with a horse-rake will do as much work as four men with forks. It is impossible to cure hay when rain has fallen on it. The natural sap never injures hay. If clover is heavy it must be cut earlier, and you will then get another crop.

John Moores—One great fault in harvesting clover is that farmers endeavor to cut too much down at one time. Two or three acres are enough. It is very important to get it up without rain. His plan is to begin to cut in the afternoon. The next day it should be raked as soon as it will rake nicely. If the weather is good put it in small cocks and let it stand until the following day. Fermenting or heating injures it materially. Rain upon it before it is cured will not hurt it, but after being cured rain will injure it. He has three or four mows, in which the hay is loosely scattered as it is hauled in. Has had it tramped. Sometimes it fermented and sometimes it came out all right. A little fine table-salt is beneficial. It is best to cure it in cocks if you can. Moving it will dry it enough. More hay is injured from over fermentation than from putting it up too dry. Mr. Moores had not much faith in using straw with it, as it will injure the sale of the hay. Dry hay will do very well.

R. John Rogers said everything had been said on the subject that he could think about. A

good criterion as to when it is fit to rake is when it will not hang on the teeth of the rake. More hay is mow-burned by putting it away too soon, than sun-burned by allowing it to remain out too long. With a heavy crop of any kind of hay it is necessary to turn it repeatedly. Tedders are useful in saving hay.

Wm. F. Hays cuts clover when one-half the heads are brown, and raked it up as soon as the rake will take it up well. Has been mixing straw with it, from necessity, in order to make something to feed on. If a hay tedder is used, it should be as soon as possible after the mower. One-third clover and the remainder timothy makes a better and more salable hay than pure timothy.

George Gorrell said clover-hay can be put in the mow green and will not spoil. When left out too long it becomes too dry and breaks up a good deal in feeding. It is good for sheep and cattle as well as for horses, when cured nicely.

B. Silver, Jr., said that curing clover-hay depends upon the weather. If there is an appearance of rain, you should use a tedder and get it up as soon as possible. If the weather is dry it may remain out two or three days. It should be turned over before hauling it in. It is of advantage to salt it. Has put it in green, and it became very hot, but never had any to spoil. A gallon and a-half of salt is enough for a load of hay.

James Lee said he would cut in the morning, rake in windrows in the afternoon and leave it until hauling it in.

Adjourned to meet at Judge Watters', on the 19th of June. Subject, "Farm Labor,—how much to employ; how to employ it, and how to manage it?"

Management of Barn-Yard Manure.

Mr. Geddes, of New York, gives the *Tribune* the following as his judgment on this question:

The great differences in opinion and practice of practical farmers as regards preparation and application of barn-yard manure, when traced to their origin, will generally be found to grow out of the unlike character of the various branches of farming into which the business is divided. The dairy farmer, whose lands are given up to pasture and meadow, on which very little grain is raised, has one variety of, so-called, barn-yard manure, in which the excrement of cows largely predominates. The grain-raiser, whose lands are devoted to the production of wheat, corn, barley and oats, and who keeps the necessary teams to do his farm work, and cows enough to furnish him with milk and butter, and who raises a few calves to keep his stock of cows good, and a few pigs to give him a supply of pork and bacon, and perhaps, in addition, his small flock of sheep, makes manure quite unlike that of the dairy farmer.

The grain-raiser has much straw and abundant corn-stalks, and great mows of clover-hay which he wishes to turn into manure. To this end he covers his barn-yard deep with straw when winter comes, and after every considerable snow-fall again litters it over with straw. On this bed his farm-stock tread and mix the snow with the straw and their own excrement. Three times a day during all the winter months they are fed with corn-stalks, spread broadcast over the open yards and in the sheds. Later, in the season of fodd ring, clover-hay takes the place of storn-stalks, and when spring comes there is a vast amount of mixed straw, corn-stalks, the coarser parts of the clover-hay, the excrement of the animals, and the water of snow and rain. Very unlike this is the manure of the dairy farm, which is in comparative small bulk and is nearly all the dung of cows that have been stabled and quite likely fed some grain with their hay. Very little bedding has been given them, and there is consequently very little straw in the manure piles, which usually and disgustingly lean against the outside of the stables.

Fancy two men representing these two great branches of our farming, meeting at the evening discussions of our State Fair—one from Herkimer, the other from Livingston County. "How shall we care for and apply our barn-yard manure?" is the subject of discussion. The cow-man will say he must have cellars or sheds to protect manure from the washing of the rains and melting snows; the grain-man says all sheds and cellars are worse than useless; let the rain and snows saturate the manure to hasten decay, and bring it into condition to be drawn to the fields to enrich the land, so that it will produce more grain. I am not advocating the practices of either of these extreme dairymen, or extreme grain-raisers; for I think there is a better kind of farming to be found between these specialties, which combine dairying with the raising and care of animals in connection with the production of grain that shall furnish abundant material for food, and for bedding, which in warm stables can be used to absorb all the liquids of the animal excrement, and thus make the largest amount of the most valuable manure that is practicable, while we look to the farm alone for the supply of the materials.

Leaving our supposed dairyman and grain-raiser to an endless disputation, growing out of the fact that they are really talking about two unlike things to which the same name happens to be applied (in common parlance,) we will consider the best way of treating the manure made in that kind of farming which combines the feeding of animals with raising the food they eat, and the beds on which they sleep. Let us suppose first, convenient and warm stables in which the cows can all be fastened and fed, and in which they are to sleep; outside such stable, yards of convenient area, covered with straw, in which the animals take their exercise, having access to pure water. This is not far from a fair description of the arrangement of the best farmers with whom I am acquainted in Central New York, for the accommodation of their cows and young cattle. The horses that are in constant use have their stables, the colts and unused horses sheds for shelter, and the sheep are generally kept in sheds and adjoining yards, and separated into small flocks. How shall we apply the manure thus made?

The method which involves the least labor is to constantly draw it as made to the field, and

spread it from the sled or wagon as drawn, and, as soon as the season and ground will permit, harrow with a brush-harrow thoroughly, so as to break up the lumps, if there are any, and spread the manure evenly over the ground—whether the ground is to be used for pasture, meadow, or to be ploughed for a crop. If the ground is to be ploughed, the ploughing should be very shallow, that the manure may be kept as near the surface as practicable. But it is not always convenient to draw to the field as fast as the manure is made. In that case pile the manure in the yard, there to remain until wanted. Fermentation will kill many seeds of weeds in these piles, not so much by burning them up as by causing the seeds to sprout and then rot.—So, too, many of the seeds of weeds that will be in the manure which is drawn directly to a field that is to be ploughed, will germinate, and be destroyed by the cultivation that will follow.

If manure be put in large piles to ferment, I very much prefer making these piles in the barn-yards, because of the less labor, and because of the fact that the ground is manured too much under the piles when placed in the field. The great advantage of piling in the yards in cases where the manure must be drawn great distances, is the reduction of its bulk; manure piled in spring and turned at the proper time in summer, will be greatly reduced in bulk, and cost of drawing correspondingly reduced.

Whenever manure is drawn to the field it should be spread directly from the load, except in very rare cases. To manure ground evenly, a man on a wagon can do his work much better than in spreading from piles, large or small, for the very simple reason that he has the advantage of the height of the wagon in his favor, in casting.

The cost of handling manure made in stable or yard is very great, and every available means of lessening this labor is to be adopted, otherwise there will follow some loss either in time or in quality. Drawing directly to the field, and at once spreading it, is the greatest saving in time. Does the manure deteriorate by being spread and thereby lie exposed to the winds that will blow before the good qualities of the manure will go into the ground? Perhaps there will be some loss in this way. Neither scientific men nor practical farmers entirely agree on this point. The more perfectly the manure is spread, the more will the rains and thawing snows carry it into the soil, and the sooner the ploughing, if it is to be ploughed, is done, the better, if the winds do carry off any part of the value; but the ploughing in of barn-yard manure very often buries it so deep that more loss follows than would be suffered from the winds if not ploughed.

I have seen very marked good effects produced by manure drawn in the fall and early winter, and spread on the surface and there allowed to remain under the winter's snows, where it gradually dissolved and settled into the earth. The next summer's crop of corn felt the full benefit. Thus it will often happen in the management of a farm that the late-made manure can be summered in large piles or rows, and in the fall spread over meadows and next year's corn-fields to great advantage. The extra cost of piling, if the distance to the field is considerable, will be saved in the transportation, and the only loss may be one year of time. The wise farmer will look at all the facts that should govern in each case as it rises and act accordingly. No absolute law can be laid down that will at all times be applicable; we can only suggest the leading considerations which our experience clothes with importance.

Concrete and Concrete Buildings.

Concrete, by which is meant a mixture of common lime, or hydraulic lime, with gravel or broken stone, is one of the most ancient of building materials. Nearly all the oldest constructions which yet remain as monuments of the skill and industry of ancient nations are made in part of concrete. In modern engineering it is extensively used for the heaviest structures, and it has been found so cheap, durable and plastic a material for house-building, that the managers of the Peabody fund for providing dwelling-houses for the poor of London chose this for the construction of the buildings erected by them. For several years concrete of common lime-mortar and stone has been used with the best results for farm buildings, and it is now becoming very popular for this purpose in places where timber, stone and brick are scarce,—lime, sand and gravel being abundantly found almost everywhere. For ordinary use, common lime, sand and gravel, or broken stone, mixed with larger stones, are used; but for stronger work hydraulic lime is substituted. The method of procedure is as follows: The materials having been brought upon the ground and placed in readiness, a mixing-board is made of sufficient size; 16 feet by 12 is large enough for an ordinary building. The lime is slacked and mixed with sand in the usual manner. The gravel, first thoroughly wetted, is then mixed with the mortar in the proportions of five or six parts of the former to one of the latter. This is thrown into a square heap, which is divided into two portions by throwing the mass by shovelfuls taken from each end into separate heaps. When all is turned there are two heaps in place of one; these are then thrown back again into one heap, and the concrete is ready for use. In the meantime a foundation has been made by digging a trench a foot wider than the wall is to be. This is filled with the concrete already made; then broken stone, first well wetted, is thrown upon it and rammed down until the concrete appears to be evenly mingled with the stone, and every piece is brought into contact with the mortar, the gravel filling up the interstices between the larger fragments.—When the whole foundation has been gone over, the first-laid portion will have become solid enough to lay the wall upon it. And now begins the most important part of the work. A frame is needed in which to lay the material.—This is made by laying planks or boards on edge as far apart as the wall is to be thick, (12 or 16 inches, as the case may be,) and holding them in place by cross pieces nailed on to them. In this way a sort of trough is made in which the cement

is laid, and is well rammed down as before. Especial care is to be taken at the corners of the building to strengthen them with selected pieces of stone, which shall form a bond of mason work squarely built up. When one course has been finished the concrete will have become hard and another can be laid upon it. The frame boards, or plank, may then be raised to receive another course of concrete In this way the walls are put up layer by layer until the top is reached. The frames for doors and windows are put in place and built in as the walls are raised. If it is desired to lath and plaster the walls inside, blocks of wood are built in as may be needed to fasten the furring strips to, or the pieces which hold the frames may be left; but as this material is very porous and a non-conductor of moisture, the plaster may be put directly upon the wall without any lathing. By smoothly packing the stone or the concrete against the front planks, and using dressed planks, the outside may be finished with an even face, and no after-finishing will be required.

When extra strength is required, hydraulic cement, or water-lime, will be used. As this sets hard very soon after having been made, it is necessary to mix the cement and sand dry before adding the water. One barrel of cement is used with five barrels of sand and seven of broken stone or screened gravel. The cement and sand having been well mingled, are mixed with water until a thin paste is formed; the gravel is then worked into this evenly, so that each particle is coated with the mortar; it is necessary that the gravel be thoroughly wetted before the mixing, that a perfect union be formed between it and the cementing material. In all other respects the process of building up, ramming the mass until the surface is in a semi-liquid condition, and adding the broken stone, is the same as with the lime-mortar.

Recently the use of the octagonal form of building for barns has come into fashion. This form gives a space 25 per cent. larger than can be enclosed by a square wall of the same length, and still more than in an oblong form; the economy of it is, therefore, obvious. It is also superior in point of strength and stability. The manner of erecting the wall differs in no respect from that of a square or oblong building. The main difference is in the roof. The roof is of a dome-shaped form, and needs no cross or tie beams within it. The plates are laid upon the wall, are bolted together at the angles, and strengthened with corner plates of iron band, such as strips of boiler plate, if thought necessary. The eight main rafters are tied together at the top with bolts. Purlin plates are set in and bolted half-way up the roof for a small building, and two sets are used for a larger one. Sufficient lighter timbers are used to form a support for the roof boards; and the whole roof frame forms a sort of octagonal truss or hollow dome. The steeper the inclination given the stronger and more roomy will be the roof. The main beams rest upon the lower wall and need to be supported by posts in the lower barn — These posts may be made to serve as partitions for the stables. This form of building offers many advantages which will be obvious, and in these days when the horse hay-fork is in use everywhere, is especially well adapted for quickly and cheaply taking in hay or grain, and also for storing it conveniently.—*N. Y. Times.*

Commercial Fertilizers.

An interesting review of "Fertilizers and their relation to the Fat of the Land" appears in the *Boston Cultivator*, in which the writer shows that the use of other fertilizers than those of the barn-yard was practiced in this country more than a hundred years ago—prominent among which fish is mentioned, which has now on the coasts of New England and on the shores of our own Chesapeake become a most extensive source of supply to the manufacturers of fertilizers. It says "every mile can furnish abundant stores of fish and seaweed for manuring adjacent fields. The early crops of vegetables raised at the South for the Northern markets are forced with the manure of the seacoast. No mineral manure is more abundant than marl, which is found in the whole tide-water section of the Atlantic coast. It underlies wide belts at various depths, often very near the surface. Fertilizers at the present time are legion. These are guano, phosphates, bone dust, ammonia, nitrate of soda, a compost of marl, lime, cotton-seed, stable-manure and earth, etc., etc. All large slaughter-houses make a rich fertilizer. Porgy chum is a good fertilizer, as well as a good feed for poultry and sheep. Chum is the refuse of menhaden. The oil is expressed and the residue used in a green state as a fertilizer. Marsh-muck has a remarkable effect on old land, especially on light soil, and particularly on garden land that has been heavily cropped and manured for several years. It has the same effect that is caused by plowing under green crops.

The market is full of fertilizers—good, bad and indifferent. The introduction of fraudulent fertilizers (?) has called forth more or less legislation, until now the market is comparatively rid of the bogus materials. Among the latest innovations in the way of fertilizers is the bundled horse-manure. The warming qualities of this manure are well known. The city of Boston uses it very extensively, in one form or another, in the preparation of the soil of its public squares. The large number of horses owned by the city enables it to be well kept in this article.

Sale of Jersey Cattle.

Messrs. P. C. Kellogg & Co. sold in New York, on the 26th ult., fifty-five head of Jerseys, drawn from a number of herds in the vicinity, at prices which averaged very high,—the figures on some being larger than ever received before in this country. A. B. Darling's bull calf Ramaps, seven months old, brought $600; J. D. Wing's heifer Maple Blossom, twenty-seven months old, with heifer calf, two days old, brought $580; and Empressa, two years old, and heifer calf, one day old, brought $835; F. H. Faile's cow Myra, four years old, brought $1,400; and Lass Edith, four years old, brought $1,425.

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BALTIMORE, JUNE 1, 1880.

Subscription Bills.

Our thanks are due to the many friends who have promptly given attention to the reminder sent out in the last No., and those who have not yet done so will excuse us for reminding them again of the importance to us of their remitting the individual little sums, which, in the lump, make up a considerable aggregate to us.

THE COMMON-SENSE CHAIRS, advertised by W. Sinclair very effectively elsewhere in this month's FARMER, we have found by a trial of some which we bought of him some time ago, to be all that he claims for them—comfortable, substantial, yet elegant, and moderate in price. They are just the thing for country homes, for the parlor, piazzas or out-of-doors.

THE notice of our readers is called to the Mixed Paint, Paint Oil and Roofing Materials advertised by N. J. Paint, Oil and Roofing Co., who will forward samples of their goods free to parties who will write them, mentioning the AMERICAN FARMER.

DAIRYMEN who ship butter will be interested in the Butter-Wrappers, advertised in this number, of Garrett & Buchanan. They are air-tight, and preserve the butter from all bad odors likely to come in contact with it.

WE call the attention of those wishing to decorate their gardens, aquaria, &c., to the beautiful imported pearl shells advertised by Chas. L. Oudesluys & Son.

THE ANNUAL CONVENTION of American Nurserymen, Florists, &c., will be held at Chicago on the 16th and 17th instants. Robt. J. Halliday is the vice-president for Maryland.

Books Received.

From LEA & SHEPARD, Boston, through CUSHING & BAILEY, Baltimore: *Beet-Root Sugar and Cultivation of the Suyar Beet*, by E. B. Grant. This is a timely contribution to the literature of a subject now attracting, and justly, much attention from the people of this country. The author treats in the first part of his work on the history of beet-sugar and the relative advantages of Europe and North America for its production; whilst the second is devoted to the consideration of practical questions, such as the choice of soils, methods of preservation, of raising the seed, keeping and using the beet pulp. The little volume contains a great deal of useful matter, well worthy studying by those interested in its subject,—one of growing importance to our farmers and our people generally.

From the ORANGE JUDD Co., New York: *American Grape-Growing and Wine Making*, by Prof. Geo. Husmann, of the University of Missouri. Probably no more practical and competent man could be found in this country to produce a work on this subject than Mr. Husmann, and this one is likely to fill a place now vacant in our grape literature. We have handed the volume to one of our most extensive wine-makers, from whom we hope to have a review of its contents as applicable to our situation and circumstances.

From the author, *Practical Camellia Culture:* a treatise on the propagation and culture of the Camellia Japonica, by Robt. J. Halliday, of Baltimore.

We think it may almost be said in mercantile parlance that Baltimore is "headquarters for the Camellia,"—so many cultivators here were interested and successful in its cultivation and the origination of new sorts. It is appropriate therefore that a work which, let us hope, will bring back into public favor this old favorite, which disputes with the rose the title to be queen of the floral world, should have been given hence to the public.

Mr. Halliday is one of our largest cultivators, whose long experience has not been without fruits, as the contents of his work show. And he gives in plain simple language instructions such as amateurs and many professionals will appreciate, full accounts of everything to be done in the treatment, flowering and propagation of the plant, including details of the method of growing the old favorite, the Double White, from cuttings.

The work has fine colored plates and a large number of wood engravings, illustrative of the text. No cultivator ought to be without it, presenting as it does an epitome of Camellia culture.

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Baltimore Markets—June 1.

Breadstuffs.—*Flour*—Market quiet, but prices steady. We quote: Howard Street Super $3.25@4.00; do. do. Extra $4.25@5; do. do. Family $5.25@6.00; Western Super $3.25@4; do. Extra $4.25@5; do. Family $5.25@6; City Mills Super $3.50@3 75; do. do. Extra $4.50@5.00; do. do. Rio brands Extra $6@6 25; Winter Wheat Patent $6.50@7; Spring Wheat Family $5.75@6.25; Minnesota Patent $6.75@7.50; Patapsco Family $7.10; do. Extra $6.90; Chesapeake Extra $6.70; Orange Grove $6.50; Fine $2.75@3.00; Rye Flour $4.75@5.00.

Wheat.—The market for Southern was dull; for Western strong and active We quote: No. 2 red, cash, $1.34@1.34¼; do. do. May, $1.34@1.34¼; do. do. June, $1.24@1.24¼; do. do. July, $1.13½; do. do. August, $1.10½@1.11; do. do. September, $1.10¼@1.10⅝; Southern Fultz $1.26@1.28; do. long-berry $1.30.

Corn.—Southern white, which was in good demand, was firm, but yellow was dull and lower. Western strong and active. We quote: Western mixed, cash, 56¾@57 cts.; do. do. May, 56¾@57 cts.; do. do. June 49 cts.; do. do. July 48¾@49 cts.; do. do. August, 49⅛@49¾ cts.; do. steamer, cash, 50 cts.; Southern white, 56¾@57 cts.; do. yellow 55 cts.

Oats.—Market quiet to-day, but rather firmer. We quote: Western mixed 42 cts.; do. bright 42@44 cts.; Southern 42@44 cts.

Rye.—Is rather easier, and we quote fair to prime at 90@95 cts., but the latter is rather an extreme quotation.

Cotton.—There was no business of moment done here, but we write the market as steady, and quote as follows: Middling, 11⅛@11⅜ cts.; Low Middling, 11⅛@ 11¼ cts.; Strict Good Ordinary, 10⅞@11 cts.; Good Ordinary, 10⅛@10⅝ cts.

Hay and Straw.—Hay continues in good demand and firm at quotations, and Straw steady and firm. We quote: Choice Cecil County Timothy $20@21; fair to prime Maryland and Pennsylvania Timothy $17@18; mixed Hay $16@18; Clover Hay $15@16; Wheat Straw $10@11; Oat do. $13@$14; Rye do. $20@22.

Butter.—The market is dull and heavy. Receipts though not very large are more than equal to the demand. We quote: New York State, choice selections, 19@20 cts.; do. do. do. dairies 18@19 cts.; Western creamery, choice, 20@22 cts.; do. tubs, choice fresh grass, 14@16 cts.; do. do. good to prime do. 11@13 cts.; nearby receipts 12@15 cts.

Tobacco.—The market is still quiet, but holders are very firm. We quote: Maryland, inferior and frosted, $2.50@3; do. sound common, $3.50; do. good do., $4@5; do. middling, $6@8; do. good to fine red, $8.50@10; do. fancy, $11@15; do. ground leaves, new, $2.50@8; Virginia, common and good lugs, $3@5.50; do. common to medium leaf, $6@8; do. fair to good leaf, $8@10; do. selections, $12@16; do. -tems, common to fine, $1.50@3.

Live Stock.—*Beef Cattle*—Trade was generally dull and stopped rather earlier than usual for so slow a market. Prices 2¾@5¾ cts., with most sales 4¾@5¼ cts. We quote: Very best on sale, 5@5¾ cts.; that generally rated first quality, 4@5 cts.; medium or good fair quality, 3¾@4 cts.; ordinary thin Steers, Oxen and Cows, 2¼@3¾ cts.; extreme range of prices, 2¾@5¾ cts.; most of the sales were from 4¾@5¼ cts. *Milch Cows*—The market is slow and prices $20@45 per head. *Swine*—Though trade is not very active, yet dealers are not complaining of its being dull. We quote prices at 5¼@ 5¾ cts. for rough Sows and Stags, and the better grades 6@6¼ cts. *Sheep.*—There has been a fair state of trade in all the yards. We quote thin Sheep at 3@3½ cts., and better grades 3¾@5½ cts., the latter for a lot of 150 head exported. Lambs are quoted at 4½@6½ cts., and trade good.

$777 A YEAR and expenses to agents. Outfit Free. Address P. O. VICKERY, Augusta, Maine.

SOUTHDOWN BUCKS

Twenty-five Southdown Buck Lambs for sale. They are all from imported stock of superior quality, and will be sold for $15 each, not to leave the State.

FRANCIS MORRIS,
Oakland, Howard Co., Md.

FRENCH'S SELECTED LAND PLASTER.

Ground expressly for **Farmers' use**, from dry Selected Rock, and prepared for mixing with PARIS GREEN. For sale by ton, barrel or bushel.

Strictly Pure Paris Green
French, Richards & Co.

Plaster and Cement Depot: York Ave. and Callowhill Sts., Philadelphia, Pa.

READ THIS!

You can have Fruit and Vegetables the whole year round by using

THE GRANGER

Family Fruit and Vegetable Evaporator.

It can be used on kitchen stove. No extra expense for fuel. Dries fruits in two hours. Retail price $3.50 to $10. Agents wanted in every town. Trade supplied at very liberal discount. Send for circular, free.

The Eastern Manufacturing Company,
Office, 706 PINE ST., PHILADELPHIA, PA.

PAINT OIL

The equal of Linseed, tested fifteen years in our mixed paints, and never before offered for sale. It can be used for all purposes Linseed Oil is used, is *superior* for oiling wood, and new shingles coated with it will last ten years longer.

Price,	5 gallons	$ 3 00
"	10 "	5 00
"	20 "	9 00
"	45 "	18 00

PAINT

And Cement for *Leaky Roofs*. Our *Elastic* Paint for old Tin, Iron, Felt and Shingle Roofs is the best in the world. Fifteen years in constant use all over the country. It is also largely used on brick walls, Factories, Bridges and out-buildings. Colors: Dark Red, Brown and Bright Red.

Price,	5 gallons	$ 5 00
"	10 "	9 00
"	20 "	15 00
"	45 "	30 00
"	10 lb. Cement	1 25
"	20 " "	2 00

ROOFING

For new Steep or Flat Roofs, our Elastic Roofing Felt can be laid by anyone, and is superior to ALL other Roofings for CHEAPNESS, FIRE-PROOF qualities and dursbility.

Price, 3 CENTS per sq. foot. Send stamp for SAMPLE with full particulars.

N. J. PAINT, OIL & ROOFING CO.

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American Butter Wrapper.

(Trade-mark "G. & B.")

BUTTER RAGS NO LONGER NEEDED.

Having fully tested the merit of our Water-proof Paper as a Butter-wrapper, we offer it with confidence to all who make or handle butter as being in all respects superior to linen or cotton cloths, for the following reasons:

FIRST—It is always sure to be **sweet** and **clean.**

SECOND—Being air-tight, it preserves the **freshness** and **flavor** of the butter.

THIRD—It is **cheap,** being but one-sixth the cost of cloth; in fact, the cost of WASHING butter-cloths ALONE amounts to more than the price of the paper.

One of the most popular butter-makers of Chester Co., Pa., says: "It is all you claim for it, and more." And we have the voluntary testimony of hundreds of others to the same effect. Samples, with prices, will be sent by mail on receipt of a three-cent postage stamp.

Originated and manufactured only by

GARRETT & BUCHANAN,

Nos. 3, 5 and 7 Decatur St., PHILADELPHIA, PA.

— 1880. —

Pennsylvania Lawn Mower.

Surpassing all others and pronounced **the best,** lightest, runs more easily, cuts longer grass, is more durable, requires less repair, cuts grass more smoothly, is less liable to obstruction, is of handsome appearance. Pennsylvania State Agricultural Society says: "It will, we believe, wear longer, do the work better with less labor than any other Mower. One of the peculiarities is that it will cut higher grass than any other Mower."

Every machine warranted. Address

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Teamster and Cook Wanted.

A man for farm work who understands driving and managing a team and wagon, and a woman as cook and general work,—wanted in a family 15 miles from the city, where permanent situations can be secured for such as can bring satisfactory recommendations. Apply to the editors of the FARMER for further information.

XX COT, Not Painted, White Duck, $2.

Painted Red, Brass Canvas and Fancy Bolster, $2.50.
XX CANVAS COT
27 IN WIDE
WEIGHT 12 LBS.
MEAS 1/2 CUB. FT.
Painted Red, Striped Canvas and Fancy Bolster, $3.00.

Makes a perfect bed. No mattress or pillows required. Better than a hammock, as it fits the body as pleasantly, and lies *straight*. Folded or opened instantly. Self-fastening. It is just the thing for hotels, offices, cottages, camp-meetings, sportsmen, etc. Good for the lawn, piazza, or "coolest place in the house." Splendid for invalids or children. Sent on receipt of price, or C. O. D. For **50 cts. extra,** with order. I will prepay expressage to any railroad station east of Mississippi River and north of Mason and Dixon's Line. For **75 cents,** in Minnesota, Missouri and Iowa.

HERMON W. LADD, 16 North Second Street, Philadelphia; 108 Fulton Street, Boston; 207 Canal Street, New York. **Send for Circulars.**

PENSIONS!

Every wound or injury, even by accident or any disease, entitles a soldier of the late war to a pension. All pensions by the law of January, 1879, begin BACK at date of discharge or death of the soldier. All entitled should apply at once. Thousands who are now drawing pension, are entitled to an increase. Soldiers and widows of the war of 1812 and Mexican war, entitled to pensions. Thousands are yet entitled to bounty, but don't know it. Fees in all cases, only $10.00. Send two stamps for new laws, blanks and instructions, to NAT. WARD FITZGERALD, U. S. Claim Attorney, Box 588, Washington, D. C.

HOLSTEINS.

THOROUGH-BRED ANGLER CATTLE

FOR SALE.

BORSTEL, pr *Sülfeld,* Near Hamburg, Germany. **A. WITTEKIND.**

UNIVERSITY OF THE STATE OF NEW YORK.

American Veterinary College,

141 West 54th St., New York City.

The SIXTH REGULAR WINTER COURSE OF LECTURES will commence October, 1880.

For particulars and Circulars, address

A. LIAUTARD, M.D.V.S.,

Dean of Faculty.

WHY DOES

a woman's health so often break down at an early age?

Put a man at the wash-tub, let him get heated from the hot suds until every pore is opened, then let him stand over the filthy steam that comes from scalding and boiling clothes, that are full of sweat and exhalations from the skin, and his health certainly would break down before long; and yet this terrible ordeal is exactly what

A WOMAN

has to go through on wash-day; and besides, with her clothing wet from perspiration at the hot work, she has to risk her life by going out in the air to hang up the clothes.

Even those not at the work are in the unhealthy atmosphere; its smell, so apparent to visitors, showing that it finds its way through the house,—the family, however, often becoming so accustomed to the peculiar odor from its own wash as not to notice it.

These facts, which are known to be true by every housekeeper, readily explain why so many women suffer with Rheumatism, Weak Nerves or Neuralgia, and

LOOK OLD

while yet young in years; and Physicians and Boards of Health cannot draw attention too strongly to the injurious effects of the usual way of washing, with its necessary steam and scalding or boiling to get the clothes pure and sweet-smelling, especially as it is often the direct cause of those dreadful diseases, Diphtheria, Typhoid Fever and Consumption. Fortunately this trouble can be avoided; scalding, boiling and steam done away with; clothes made sweet and beautifully white; **from the saving in fuel, the wash done at a less cost than when home-made Soap is used,** and very much

SOONER THAN

by the old way, by using **FRANK SIDDALLS SOAP,**—a Soap so Purifying and Cleansing that the dirtiest clothing can be washed in lukewarm water, with very little rubbing, and Clothes, Bedding and utensils used by the sick disinfected and cleansed without either scalding or boiling; while the work is so light that a girl of 12 or 13 can do a large wash without being tired; and yet so mild and healing is this Soap, that for toilet and shaving it has no equal, and physicians advise its use in preference to imported Castile Soap on wounds and sores and to wash the youngest infants.

Now that there is a remedy for this "great wash-day evil" **so economical in its use as to be within the reach of the poorest,** there is not a women or

A MAN

who is not directly interested in having used in their homes **THAT WONDERFUL SOAP,** which, **when properly tried,** not only does away with the hard work, offensive smell and fearful steam on wash-days, but makes the white pieces whiter, colored pieces brighter and flannels softer than they can be made by washing the old way, and also leaves every article as clean, as sweet and as pure as if never worn.

NEARBY TESTIMONIALS.

From General William Craig, of MORNING HERALD; residence, 236 Lanvale Street:

After a thorough trial of **FRANK SIDDALLS SOAP** in my house it is pronounced the best we have ever used. It saves an immense amount of labor and economizes the consumption of fuel to a large extent, and hereafter we shall use no other.

From Manager of Dexter Laundry, Washington, D. C.; 301 Sixth St., corner C St., N. W.:

No laundry or family can afford to be without **FRANK SIDDALLS SOAP.** We never scald or boil, and use no other Soap, and have a reputation second to no laundry in Washington for white clothes,—the superior work we have been enabled to turn out having secured us the trade of some of the best gentlemen's furnishing stores in the city.

Sold by Retail and Wholesale Grocers.

☞ To points where not yet introduced, a trial cake will be forwarded to any part of the United States, postage prepaid, on receipt of price, (10 cts.,) in money or stamps.

Address all letters,

Office FRANK SIDDALLS SOAP, 718 Callowhill St., Phila., Pa.

Just think what you will save by this easy way of Washing!

Get a Cake and Try it for Yourself Next Wash-day.

Flowers, Plants, Bulbs, &c.

New Illustrated Catalogue, with Colored Plate for 1880, of Rare and Popular Plants for the

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Now ready. Mailed free to all customers; to others on receipt of four three-cent stamps.

☞PRACTICAL CAMELLIA CULTURE.

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ROBT. J. HALLIDAY,

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WHITELOCK'S "VEGETATOR!"

AMMONIATED SUPER PHOSPHATE
W. WHITELOCK
TRADE & CO'S MARK
VEGETATOR
BALTIMORE
160
THE CROP PRODUCER

This article has for its base

Bones Finely Ground and Thoroughly Dissolved

And is so rich in

FERTILIZING PROPERTIES

As to carry the wheat through the severest winter. While other manures may produce a good crop of straw, there is nothing on the market that will uniformly bring the same quantity of wheat per acre. Apply three-fourths only as much as of other brands. Also for sale,

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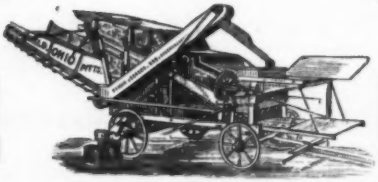
The Springfield Pitts Separators

AND  **STEAM**

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The best **Engine** and **Separator** now in the market. Send for Circular and Price-List. Also, we are Sole Agents for the celebrated **Thomas Wheel Horse Rakes,** the best made and easiest dump Rake in the market; **Superior Drill, South Bend Chilled Plows, Double Shovel Plows, Corn Planters** and **AGRICULTURAL IMPLEMENTS GENERALLY.**

Send for Descriptive Catalogue and Price List to

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OR POTASH SALTS

A lot of prime dry in store for sale in small lots at lowest wholesale prices.

The Brown Chemical Co.

25 S. Sharp Street.

"The only objection to your

'COMMON-SENSE ROCKER'

is, we all want it. They suit all sizes, from the two-year-old baby to the champion member of the Fat Men's Club."

My Reading and Writing Table

Is adjustable to nearly all kinds of ARM-CHAIRS is a great convenience in reading or writing; makes a good cutting or lap-board for ladies, or dining-table for invalids.

My Easy-Chairs.

The frames are hard wood, carefully selected and thoroughly seasoned. The seats are double cane or ash splints, split from young, tough timber; are made by experienced workmen, under my own supervision. Any chair bearing my stamp is warranted, and if it fail in any part by fair usage, the price will be refunded or another chair furnished free of expense. I do not make the *cheapest* chair in the market, but I do claim it to be THE BEST in every respect. Rockers and chairs to order, any size or height desired. Send stamp for illustrated price-list.

Before purchasing, see that the chair has my address stamped on frame Knocked down in packages of half dozens for shipping.

For export, Nos. 1, 2, 4, 5, 6, 8, 13 and 16, made knock down, in wood. Boxed one dozen in a box. No charge for box.

Every chair made upon honor and warranted perfect. Prices range from 75 cents to $9.00 each. *Special discount to clergymen.* Send for catalogue. Manufactured by

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Special rates of freight on nearly all R. R.

ESTABLISHED 1848.

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CONCENTRATED
SUPER-PHOSPHATE
FOR ALL CROPS.

It is made of the best and most concentrated materials, possesses all the virtues of PERUVIAN GUANO and BONE-DUST combined, and is well adapted to Wheat, Corn, Oats, &c., producing abundant crops where all others fail. Having a large percentage of Soluble and Precipitated **Phosphoric Acid and Ammonia,** it is without doubt **the richest Commercial Fertilizer in the country.**

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BONE-DUST

Made only of Slaughter-house Bones, contains a larger percentage of AMMONIA and BONE PHOSPHATE LIME than any other brand in the market.

WE OFFER

One Thousand Dollars!

For the Detection of any Impurity in our Manufacture of Bone.

We do not steam or bake our Bones, or otherwise treat them so as to destroy the animal matter, which is rich in ammonia.

The Best Article in the Market

HORNER'S
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—OR—
DISSOLVED BONE,

MADE OF PURE SLAUGHTER-HOUSE BONES

It is richer in Soluble Phosphoric Acid and Ammonia than any similar article in the market.

CHEMICALS

And other materials for making

Home Fertilizers

Muriate Potash, Kainit,
Sulphate Soda, Plaster,
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Nitrate Soda, Dried Blood,
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A full supply of PURE Materials always on hand and for sale at lowest market

Write or call before buying elsewhere.

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OR. BOWLY'S WHARF AND WOOD STREET,

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Ammoniated Bone Super-Phosphate

Composed of the most concentrated materials, it is

RICHER IN AMMONIA AND SOLUBLE PHOSPHATES

Than any other fertilizer sold, except OUR EXCELSIOR, and is made with the same care and supervision; uniform quality guaranteed. Fine and dry, in excellent order for drilling. We have also a very superior quality of

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And keep constantly on hand a large supply of high-grade PERUVIAN GUANO.

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The Oliver Chilled Plow, Thomas' Smoothing Harrow, Harrows, Cultivators,

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SWEEPSTAKES THRESHER,
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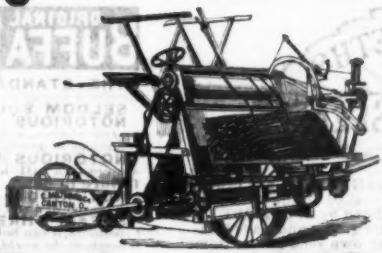

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40 to 50 Ram and Ewe Lambs that promise to shear from 12 to 20 lbs. to the fleece; fit for delivery September 1st. Sired by imported "Golden Locks," of nearly 400 lbs. carcass and 21¼ lbs. fleece, and "Duke of Gloucester," of 350 lbs. carcass and 24 lbs. fleece. Also, a few choice Yearling Rams.

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The attention of MARKET GARDENERS and others desiring to purchase SEEDS is called to the FACT that the Cabbage and other Seeds offered by D. LANDRETH & SONS to their customers are grown and saved entirely by themselves, upon their own seed farms, from their own seed stocks, the result of many years' careful and intelligent selection, and are not the result of chance and careless purchases from parties who know nothing of the business of raising seeds. Seed-raising requires years of close observation, careful attention to the one subject, and cannot be acquired in a short time by those whose attention has been engrossed with other pursuits.

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Seeds Offered by us Have no Superior in this or any Other Country.

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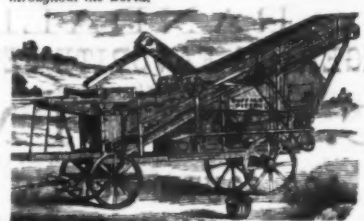
ORIGINAL AND ONLY GENUINE
BUFFALO PITTS

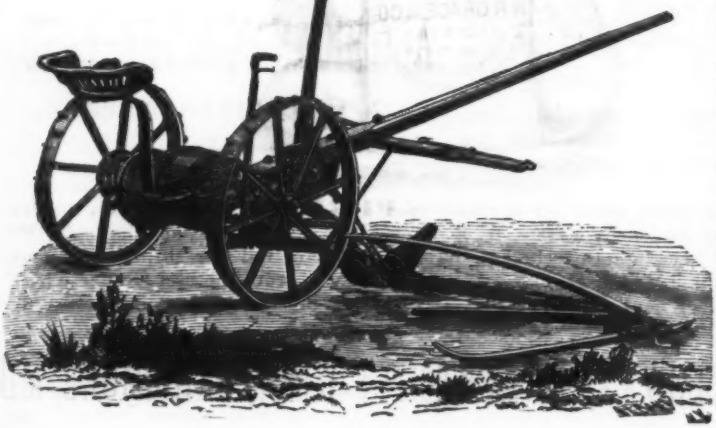
THE STANDARD of Threshing-Machine *excellence* throughout the *Grain-Growing World.*
SELDOM EQUALLED. *Never excelled.*
NOTORIOUS as a *fast, yet thorough thresher, perfect cleaner,* and *entire saver of all* kinds and conditions of *grains* and *flax* and *timothy seeds.*
NOTORIOUS as the **only** machine that is a **success** in **all kinds of threshing** and a **failure in none.**
NOTORIOUS as the *best built, most durable,* and *handsomest* of the *Threshing-Machine Tribe.*
STEAM THRESHERS a *specialty.* Their superiority, it can be said with *truth,* is acknowledged *throughout the world.*



CAUTION To Agents as well as **Thresher-men.** Be sure you get the *genuine* **Buffalo Pitts,** made *only* at THE PITTS AGRICULTURAL WORKS, Buffalo, N. Y. It is said that other manufacturers are using the name "*Buffalo Pitts*" on their make of Threshing Machines. This Unintentional Compliment to the *great reputation* of the *only* genuine *Buffalo Pitts* by use of its title to sell inferior machines, is flattery to the "**Buffalo Pitts.**" Both Agents and Threshers must not be deceived, nor make the genuine *Buffalo Pitts* responsible for the *faults of its bastard namesake.* For Catalogues and Price-Lists of the genuine Buffalo Pitts, address

THE PITTS AGRICULTURAL WORKS,
Buffalo, N. Y., U. S. A.

The Remington IMPROVED MOWER.



Simple, Durable and Effective. Frame is made entirely of Iron, thus preventing warping or springing. Send for Circular.

ALSO,

Ilion Wheel-Rake, Carbon Plows, &c., &c.

A. & A. G. ALFORD,
23 S. Calvert St., Baltimore.

PLYMOUTH ROCKS.

EGGS!

$2.00 for 13.
3.50 for 26.

THOMAS W. HOOPER,
Lake Roland, Baltimore Co.
and
27 N. Calvert St., Baltimore, Md.

LARGE MOTHER-OF-PEARL SHELLS

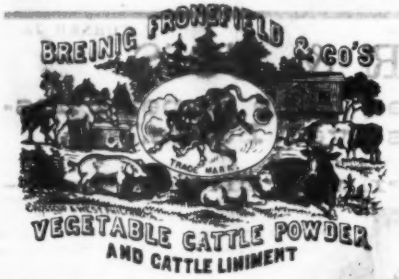
For Garden Ornamentation, of the Haliotes variety, white or variegated—in the natural state. Also, suitable for *Mounds, Fountains, Aquariums*, etc. For sale by the bag or larger quantity. 40 tons for sale by

CHAS. L. OUDESLUYS & SON,
No. 67 EXCHANGE PLACE.

COTTON-SEED MEAL.

STANDARD FOOD FOR CATTLE,

For sale by A. L. BOGGS & CO.
147 N. Howard Street, Baltimore.



This Powder has proven to be a most reliable preparation in all the ordinary diseases of **HORSES, CATTLE, SHEEP, SWINE and POULTRY.** It will keep the animal in a complete, thrifty, healthy condition, naturally producing to its full capacity without any injury to its system.

Your Cow is sure to yield an increase of milk and butter of at least 25 per cent. Your stock will fatten on one-fourth less feed.

Especially does this Powder show its good effect on **HOGS.** It has also been found a sure cure and preventative of **CHICKEN CHOLERA and HOG CHOLERA.** Price 25 cents per pack of 12 ounces. 5 packs $1.00. 1 dozen $2.00. A pamphlet with full particulars. Address,

F. A. MILLER,
SOLE PROPRIETOR,
No. 331 ARCH STREET, PHILADELPHIA.

N. B. My sales for the past six years have averaged 765 gross per year.

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A Large and Beautifully-Illustrated Monthly,

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EARLY AND LATE CELERY,

Early Cabbage, Tomato, Egg Plants, Pepper and Sweet Potato Plants of Choicest Varieties,

BY THE DOZEN, HUNDRED, THOUSAND OR TENS OF THOUSANDS.

Having consented to act as agent for the largest grower of VEGETABLE PLANTS on the Eastern Shore, I will take orders for Plants of any kind and guarantee them true and from the best seed in the country. All Plants will be packed in damp moss, and delivered at the wharf of the Chester River Steamboat Co., Light Street, Baltimore, without extra charge. For circulars, with full prices, &c., address

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I will spare a limited number of Eggs from my choice breeds, consisting of LIGHT BRAHMAS, HOUDANS, PLYMOUTH ROCKS, LEGHORNS, BLACK RED GAMES, P. COCHINS, SULTANS, HAMBURGS, DOMINIQUES, NARRAGANSETT TURKEYS AND BANTAMS.

My fowls have always won wherever exhibited. I send Eggs from same fowls I breed my best show-birds from. Send stamp for circulars. A few Leghorns for sale.

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Forming the most concentrated, universal and durable FERTILIZER ever offered to the farmer,—combining all the stimulating qualities of Peruvian Guano and the ever-durable fertilizing properties of Bones in fine, dry powder, prepared expressly for drilling, and can be applied in any quantity, however small, per acre. It is the opinion of many close-calculating farmers, after TWENTY-TWO YEARS experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of "EXCELSIOR" is equal to 200 pounds of any other fertilizer or guano, and therefore fully 100 per cent. cheaper.

Uniformity of Quality Guaranteed by the Manufacturers.

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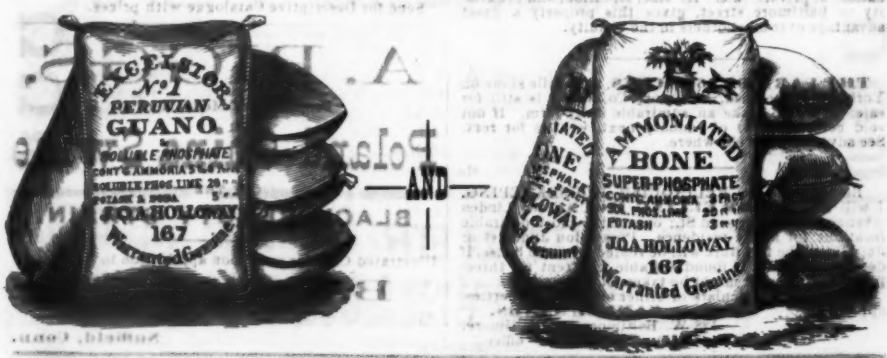
The undersigned, PIONEER in the manufacture of Fertilizers in this city, and ORIGINATOR in 1858 of the Formulas and processes of manufacture of

"Excelsior" and Ammoniated Phosphate,

So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers, as manufactured by him, continues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.



The above are the most concentrated FERTILIZERS ever offered to the farmers and planters—combining all the stimulating qualities of Peruvian Guano, and the ever-durable fertilizing properties of Bones, in fine, dry powder, prepared expressly for drilling,—and it is the universal opinion of the farmers and planters of Maryland and Virginia, after over twenty years experience in the use of the EXCELSIOR manufactured by me, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

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The Property, N. E. Cor. Sharp and German Sts., Baltimore, about 44 feet on Sharp by 117 feet on German St., to a public alley in rear, with outlets to Baltimore and Sharp Sts., thus giving three fronts, and presenting unsurpassed facilities for business in the very heart of the wholesale trade of Baltimore, and of a section in which, during the past year, many of the largest and finest warehouses in the city have been erected, and one of the most valuable and available pieces of property likely soon to come into the market. There is a warehouse on the Sharp St. front of four stories, the upper ones reached separately by wide entrance and stairway. That on German street is two stories, with separate stairs to upper one. The first and second floors extend through the whole extent of the lot, and make fine show-rooms, well-lighted, and suited for any large business. The rear portion might be raised on present foundations and walls, if purchaser preferred thus to improve the property.

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Torpid Liver, and cures all Diseases arising from a disordered stomach. Its use can be stopped at any time, without any bad effects. Always beneficial; never harmful. Be sure and get the genuine. Prepared at

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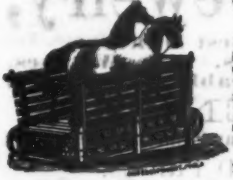

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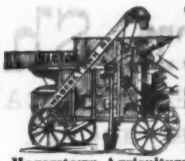

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These cuts represent our 20 Steel-Tooth Horse Rake, with Iron Hubs (or Locust Hubs boiled in oil)—9,000 in use—and our Positive Force-Feed Grain, Seed, and Fertilizing Drill (which can be changed to sow any quantity while Drill is in motion), with Pin or Spring Hoes—4,277 in use and giving satisfaction. All manufacturers say theirs are the best. All we ask is, send for *Descriptive Circular and Price-List*, which contains letters from persons using them. All are *warranted*.

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Or Exchange for City Property.

Containing 150 acres; about 25 to 30 acres in thriving timber, principally oak and chestnut; it is well watered and admirably adapted to a dairy or market farm; the soil is very kind and susceptible of the highest improvement; it is now principally set in grass. It is at the 10-mile stone on the York turnpike, fronting on both sides of the road, and five stations on the Northern Central R. R. can be reached at distances of 1 to 3 miles, by good county roads. This is the circle of the members of the Gunpowder Club, and is undoubtedly one of the best locations in the county. Churches, of all denominations, and schools, public and private, are convenient. The York turnpike is one of the very best, and the distance from the city permits a round-trip a day, for wagoning. Probably no healthier spot in the world can be found. It is laid off in fields of 12 to 15 acres, to most of which easy access is had to water for stock. The dwelling, which is commodious, and large barn, are of stone, with other outhouses, though old, yet can be made very comfortable at a reasonable expense; and there are several admirable sites for residences on the premises. This property could be advantageously divided into small lots and sold at a very great advance on the price asked for the whole. Lots on the road have brought as high as $500 an acre, and the extent of the frontage on the turnpike, in the hands of an enterprising man, could be turned to excellent account, but the present owner is indisposed to take the trouble requisite to accomplish this, and would prefer selling the whole together. A gentleman with a very small income independent of the farm, could live on this place without labor, saving the rent of a city residence, by renting the fields on shares to be farmed under his control, reserving a garden and stabling, and the pasturage necessary for his stock. A small tenant's house on the premises would rent for the amount of taxes on the place. As I cannot occupy the place myself, I am willing to sell it on the most reasonable terms, or exchange it for city property in a good locality. For further particulars apply to the subscriber, at office of *American Farmer*.

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New Organs 25 Stops, 3 set Golden Tongue Reeds, 12 Oct's, 2 Knee Swells, Walnut Case, warr'd 6 years, Stool & Book $90. New **Pianos**, Stool, Cover & Book, $145 to $255. Before you buy be sure to write me. Illustrated Newspaper sent **Free**. Address **DANL. F. BEATTY**, Washington, New Jersey.

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A superior lot of **Apple Trees,** winter varieties, for Maryland and Virginia, a specialty. Trees 5 to 7 feet at $10 per 100. A large supply also of Red Astrachan and Early Harvest—the two leading early summer market varieties. **Standard Pear Trees,** very fine, 5 to 7 feet, at $30 per 100. An immense stock of **Concord Grape Vines** at greatly reduced prices, viz: 3 years old, strong, $8 per 500 or $15 per 1,000; two years old, selected, $7 per 500 or $12.50 per 1,000; 1 year old, selected, $5 per 500 or $10 per 1,000. A large stock of Osage Orange Plants for hedging. One-year old plants selected at $2.50 per 1,000, 1st class, or $1.50 for 2d class. Also, Shade and Evergreen Trees at very low rates. Correspondence solicited. Price-Lists of all kinds of nursery stock free to applicants.

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ONLY $15 PER TON—16 BAGS.

It is a permanent improver of the soil. The second and third year's application does not require any more than the first to produce the same results, and no more required per acre than of the other manure, but larger results as per tests. Send for testimonials and see what others have done with it.

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We have also a fine lot of **MAGNOLIA GRANDIFLORA** grown in pots, all the **NEW COLEUS,** quite a distinct type from the older varieties, together with a **GENERAL COLLECTION OF PLANTS** that may be found in a first-class establishment.

At our store, **ON CHARLES STREET, Cor. Saratoga,** in the Young Men's Christian Association Building, a collection of Plants and Flowers may always be found. Choice Bouquets, Funeral Designs, and designs for the decoration of rooms, tables, and for everything for which flowers are used, put up in the most artistic style of the art, at short notice and at charges that will compare favorably with any in the country.

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Yours truly,

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Valuable insecticide for the extermination of the Colorado Beetle, Cotton Worm and Canker Worm. For prices, circulars and opinions, write to HEMINGWAY'S LONDON PURPLE COMPANY, Limited, 90 Water Street, New York.

Professor C. V. Riley says London Purple can be more effectually sprinkled or sprayed on to the plant than Paris Green, by virtue of its greater fineness.

Professor C. E Bessey, Professor of Botany, Ames, Iowa, says: "It promises to be a most excellent remedy. It quickly kills both the Larvæ and Winged Insects."

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Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blind Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames, Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

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MESSRS. M'GINNIS, TAYLOR & HOLDERBY:

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It pulverizes deeply, and its smoothing capacity is equal to any Harrow I have ever tried.

It stands unrivaled for destroying the toughest sods with its knife-like teeth, perfectly reducing the sod with two harrowings, presenting a thorough seed-bed for any kind of grain or seed.

Its draft is much lighter than the ordinary Harrow.

It is equal to the Thomas Harrow in lightness of draft, while it possesses decided advantages over the Thomas in DEEP PULVERIZATION, STRENGTH AND DURABILITY.

I have said thus much from observation of its working on the field.

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Yours truly, J. D. GUTHRIE.

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Are prepared, with great care, from medical plants, are *coated with sugar* that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver—thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a Bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

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DR. GILPIN—After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say, that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them not only to my patients, but the entire medical profession. Yours truly, J. M. WISTAR, M. D.

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MESSRS. CANBY, GILPIN & CO.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, &c., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit—knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable Druggists and Country Storekeepers throughout the United States and Canadas.

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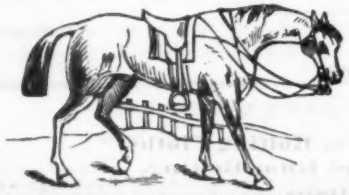

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As Layers, the WHITE LEGHORNS have few superiors, and are strictly **non-Sitters** Can furnish them at **$3 per trio,** boxed and delivered to railroad.

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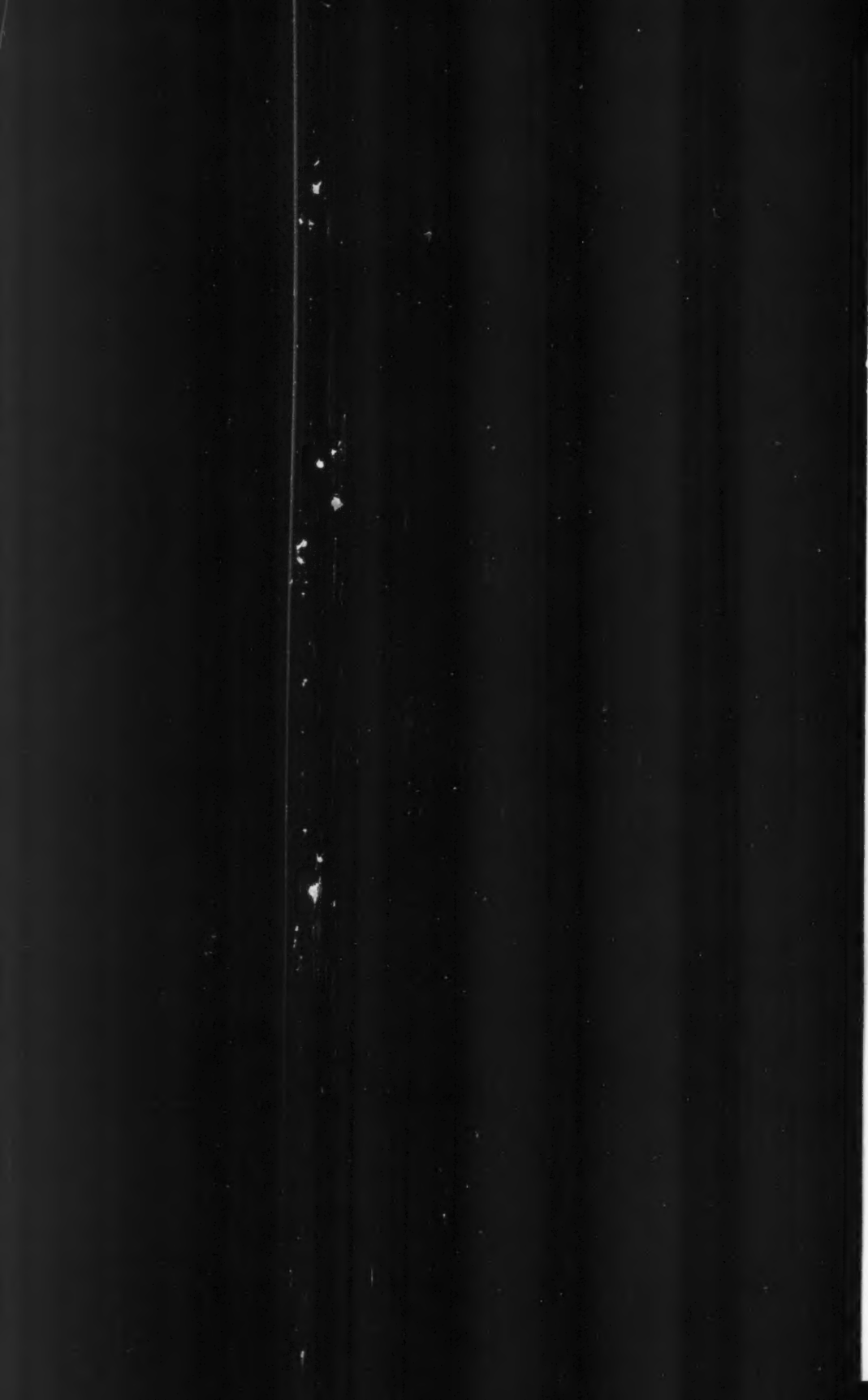

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